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THE

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PRIGINAL CONTRIBUTIONS.

Size of Human Skull and Weight of Human Brain.

TRANSLATED FOR THE "MEDICAL NEWS" FROM THE "TRIBUNE MEDICALE." BY R. B. DAVY, M. D., CINCINNATI, O.

In a recent number of the *Tribune Medicale* there appeared an interesting paper on "Studies in Comparative Biology"—being a collection of facts pertaining to the size of the skull and weight of the brain—by Dr. Gætan Delanny. The following condensed account represents the facts set forth:

The higher species of animals have larger skulls and heavier brains than the lower ones. In this respect man is the first among animals. The weight of the brain increases with the progression from the lower to the higher species, being heaviest in man. "The farther back the brain of the mammifera is traced in the remote ages, the more it is reduced in size, with respect to the head and body." (Lartet.)

"Fossil human remains have very small skulls. With the race of Canstadt, the most ancient race of all Western Europe, the capacity of the skull is very small, and appears even less than that of the Hottentots and Aus-

tralians." (Broca.)

According to M. Broca the cranial capacity grows from century to century by evolution. The skulls collected from the cemetery of the Innocents, opened under Philip Augustus, in the thirteenth century, have a mean capacity of 1,409 cubic centimeters, while those collected from the cemetery of the West, at the beginning of the nineteenth century, have 1,461, or fifty-two

more than the first. "Superior races of men have larger skulls and heavier brains than inferior ones."

"The capacity of the Australian skull is 1,347 cubic centimeters, that of the African negro 1,371, and that of the European more than 1,500. There is a difference of from one hundred and thirty to one hundred and fifty cubic centimeters between the highest and lowest races. The weight of the negro brain is from 1,230 to 1,330 grammes, while that of the European is from 1,340 to 1,420 grammes. The weight of the white man's brain exceeds by thirty per cent. that of the savage." (Broca.)

The mean cranial capacity is 1,474 cubic centimeters in the Anglo-American, 1,534 in the German, and 1,572

in the Englishman.

"The cranial capacity is greater in the male than the female" (Loemmering, Parchappe, Broca, etc.), and, in general, the weight of the brain possesses the same relation. The Australian male skull has a capacity of 1,347 cubic centimeters, while the female has only 1,181. According to Morselli, the relation between the two is 100 to 85. The brain of the male gorilla weighs 530 grammes, while that of the female weighs only 470 grammes. In the white race the mean weight is from 1,200 to 1,400 grammes in man, and from 1,100 to 1,300 in woman.

According to Broca the weight of the brain is 1,323 grammes in man, and 1,210 in woman; the maximum is 1,410 in man, and 1,262 in woman; the minimum is 1,049 in man, and 907 in woman.

According to Tiedemann the ratio of the weight of the brain to that of the body is 1 to 40 in the adult man, and 1 to 44 in the woman. But the difference in favor of man is not the same at every age.

According to Broca the weight of the brain, in grammes, is

```
From 21 to 30 years in man, 1,341; in woman, 1,249.

" 31 " 40 " " " 1,410; " " 1 262.

" 41 " 50 " " " 1,391; " " 1,261.

" 51 " 60 " " " 1,341; " " 1,236.

" 61 and above " " 1,326; " " 1,203.
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According to Grist:

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From 65 to 75 years in man, 1,064; in woman, 979.
" 75 " 85 " " " 1,031; " " 975.
" 85 " 93 " " " 1,023; " " 942.
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The difference in favor of man which corresponds to the number 7, from 21 to 30 years, rises to 11 from 31 to 40, then falls to 10 from 41 to 50, and to 8 from 51 to 60. The cranial capacity increases up to the age of 45, when the sutures close in the higher races. It is, in general, greater in the robust than in the delicate, and greater in large than small individuals.

"In our race the weight of the brain can increase through the whole duration of vigorous life. The ordinary brain continues to grow in weight until the 40th

year." (Broca.)

With the aged, the weight of the brain decreases in man to 1,025 grammes, and in woman to 905 grammes. It loses in man 84, and in woman 59 grammes, from its weight in the age of greatest mental vigor.

"The relative weight of the hemispheres is much less at Bicetre than at Saint Antoine, because the inmates of the former are older, and no longer take part

in active life." (Broca.)

The left side of the skull is larger than the right, especially among educated people. According to the researches of Lacassagne, at the Val-de-Grace, the skull is more developed on the left side among doctors than among soldiers.

"In its retrogression, as in its development, the left half of the skull is the seat of a more active nutrition than the right, which corresponds with the predominance

of the left hemisphere of the brain." (Broca.)

According to Boyd the left hemisphere weighs & of an

ounce more than the right.

Very intelligent men have greatly developed brains. The brain of Cuvier, who died at 63, weighed 1,829 grammes. The mean weight of the brain at 60 is 1,341 grammes, and the difference in favor of Cuvier is then 503.75. The brain of Byron, who died at 36, weighed 1,807 grammes; and that of Dupuytren, who died at 58, 1,436. Cerebral activity enhances the development of the skull, and increases the weight of the brain; hence the educated classes have a greater cranial capacity and heavier brains than the ignorant.

According to the researches of Broca, in the twelfth century, the cranial capacity was 1,425 cubic centimeters in the aristocratic class buried in one cemetery of the city, and 1,409 among the common people buried in

the cemetery of the Innocents. The skulls of the nineteenth century, coming from private burying-grounds, have a capacity of 1,484 grammes, while those from the burying-grounds of the masses have only 1,403, leaving a difference of 81 in favor of the educated classes. The skulls of professional men are larger than those of laborers. (Parchappe, Broca.)

The cranial capacity is less, and the brain lighter, in negro slaves than in negroes at liberty; the same rule applies to animals confined and free. Culture of the mind augments the volume of the brain. (Broca.)

In conclusion, the cranial capacity and weight of the brain being greater in the higher species and races than the lower ones (fossil or recent), in males than in females, in the adult than in the infant and aged, in the robust and large than in the feeble and small, in great men than in ordinary men, on the left side than on the right, they are in direct accordance with evolution.

Moreover, they are in direct accordance with nutrition, since they are produced by circumstances which increase nutrition like activity, and diminished by circumstances which diminish nutrition, like want of intellectual control of the control of

lectual exercise and domestication. (Davy.)

"In the old mammifera the volume of the brain is reduced in increased ratio to the size of the skull. (Lartel.)

"Comparative anatomy shows us that the cerebral lobes undergo an increase in volume in proportion as

the intelligence is developed." (Vulpian.)

The convoluting of the brain is, according to Dareste and Broca, only a consequence of augmentation of volume. A convoluted brain has a greater surface, and

is larger than a smooth one.

In the superior species, the brain is more convoluted than in the inferior. According to Stannius, many mammifers that, in the tertiary period, had brains more or less convoluted, have since lost their convolutions by degradation of the species. On the contrary, the brain of the Hipparion (ancestor of the horse) is less convoluted than that of the horse. (Lartel.)

Convolutions of the brain are not found in the Ornithorynci, Marsupialia, Insectivora, certain of the Edentata, Cheiroptera, and a great majority of the Ruminantia. They exist in certain fishes, the Carnivora, Proboscidea, some Ruminants, the Cetacea, and Quadrumana. Some of the lower monkeys, the Lemuridae for instance, have no convolutions. The brain of the gorilla is less furrowed than that of the Chimpanzee.

Superior races have more convolutions than inferior ones. As regards sex, the male brain is more convoluted

than the female.

The brain of the fœtus is at first smooth. In man, most of the external convolutions appear between the seventh and eighth months. Afterward the convolutions divide and subdivide until the fortieth year. The third left convolution forms at one year.

The convolutions are more numerous and complicated

in intelligent persons than in idiots.

The convolutions form first in the left hemishere. The left frontal lobe has more than the right. (Broca, Barkow, Roque.) The convolutions of the middle lobe are more complicated on the left than on the right side. (Roque.)

The frontal are more convoluted than the occipital lobes. "In comparing the brains of the great men to those of laborers, the difference in the convolutions is found to be confined to the frontal region." (Gratiolet.)

According to Gratiolet, intelligence only manifests itself in the brain after it has attained the weight of 900 grammes, and this is why it does not exist in the feetus.

So far as the sides of the brain are concerned, Brown-Sequard believes that the right hemisphere is especially concerned in vegetative life. The truth is that this hemisphere is more vegetative, less animal, more sensitive, less intelligent; in a word, less advanced in evolution than the left. The development of the brain takes place from behind forward. "The occipital lobe is the quickest in its development." (Duret.) After the occipital lobe (seat of sensation) appears the parietal (seat of motion), and finally the frontal (seat of intelligence).

The evolution of the brain comprises two periods: one of increase, extending from birth to the fiftieth year; the other of decrease, from the fiftieth year to death. During the period of increase, the occipital, parietal, and frontal lobes rise successively in importance; while in the period of decrease, the succession is reversed, giving, at first, the frontal lobe the predom-

inance, then the parietal, and finally the occipital. There is then an equilibrium between the different lobes—for example, the growth of the frontal lobe causes atrophy of the occipital (Broca), and conversely the occipital lobe increases when the frontal decreases (Gratiolet). The predominance of each of the three lobes constitutes then a phase in evolution which the brain presents in the course of its development,

and then again in its retrogression.

During the first phase, the occipital lobes predominate over the others. This is the case in certain inferior races (negroes, etc.), and also in women, infants, old and delicate people, who, in a physiological point of view, are more sensitive than active and intelligent. During the second, the parietal lobes predominate. This is the case in the Mongolian race, and also with children, and some adults who are more active than sensitive and intelligent. During the third, the frontal lobes predominate. This is the case with the Caucasian race, men in general, and all adults who are more intelligent than sensitive and active.

The sutures close from behind forward in the higher races, and conversely in the lower. In Europeans ossification takes place from right to left. According to Savage, the right lateral half of the coronal and lambdoidal sutures closes before the left.

Evolution.

COMMUNICATED TO THE "MEDICAL NEWS" BY JOHN MAYALL, JR., F. R. M. S., LONDON, ENGLAND.

Professor H. G. Seeley, of King's College, London, gave on Friday evening, Dec. 7, at the College, the last of his course of lectures on Evolution. He commenced by saying that he had, in his previous lectures, tried to put before his hearers the facts which bear on evolution in such a manner that they might be able to form an opinion for themselves as to the value of the theory. The real question for them to decide was whether they were prepared to believe that all the varied forms of life, which now exist on the earth, and have peopled it in past ages, were the consequences of direct interpositions of a creative power manifested in some unknown

way, or whether they would prefer to regard them as the consequences of the action of those laws by which the whole universe has been and is governed. The admitted facts of Nature have always been differently interpreted to harmonize with the developments of the human mind in successive ages. Thus the facts of astronomy, especially as illustrated by the discoveries of Gallileo, show that the antagonism in which the dominant Church of one age may find itself situated with regard to science may so far pass away that distinguished churchmen may cultivate astronomy and teach the very doctrines that were formerly anathematized. In this matter religion and science are reconciled. Although the teachings of Lamarck and Darwin give an interpretation to the facts of animal and plant life which differs from the view the Church has hitherto adopted, yet the lecturer thought it by no means impossible that all religious bodies would in time to come be able to see their way to accept the results of modern scientific research in this respect, and combine them with the moral teaching which they have an especial function in upholding.

The Professor then briefly summarized the various methods of approaching the subject which he had laid before his hearers in the seven preceding lectures. the first place, there was the physiological aspect of the subject, in connection with which he had made reference to the fact that the bodies of all animals are more or less directly built up from the white corpuscles of the blood, which in important respects are indistinguishable from that lowest form of animal life known as the Amœba. From such protoplasmic substance all the different tissues are derived, and the chief differences between the divisions of the animal kingdom are based on the direction in which the tissues grow, while the several varieties of form, such as genera and species, owe their existence to the different degrees to which the respective tissues are developed in the several animals. Secondly, there was the anatomical aspect of the subject, in which it had been shown that since the several species are all fashioned on the same common plan in each of the great classes, it follows that every species in that class repeats the structures of all the other species, excepting so far as they may vary in

those minor differences on which we group the animals into order and genera. In this way the classes may be regarded as comprehensive species which have preserved their existence through all geological time, because their plan of structures admitted of just that amount of variation which enabled them to become adapted to altered circumstances as the geographical conditions of existence changed. This point of view as compared with the explanation by separate creations is like the perfection of a piece of mechanism that works without repeated winding up, as contrasted with one which requires to be attended to every time a result is required from it. Thirdly, there was the zoological aspect, which consisted in the fact that small continental islands, such as the Azores, Cape de Verde, the Canaries, etc., each contains species of animals [r.g., beetles], distinctive of the several islands, which differ from each other and from those of the continent in characters so minute that in other localities they would be regarded only as varieties. Either these varieties, which are now permanent, have been produced by special creative acts, or else they are a consequence of the altered conditions under which the species exist in each of these localities. Fourthly, there was the bearing of the known facts respecting the geographical distribution of animals. Closely allied species are found in localities widely separated. This fact is associated with the circumstance that extinct species of the same genus often occur fossil in a country intermediate between the localities. For example, there is the tapir of Central America and the tapir of the Malay Peninsula, which differ, as far as we can see, but slightly from the tapir which occurs fossil in the crag beds of the eastern counties of England. Unless it is believed that the tapir was in each case created over again with each of its specific modifications, it follows that the surviving types are descended from some such fossil ancestral form, and have diverged from each other in consequence of the different conditions of climate, enemies, and food, which the changes of land and water have forced upon them. Fifthly, there was the fossil evidence. Many extinct orders of animals belonging to most of the great classes have been discovered which help to show a gradation of structures between those types of life which survive

at the present day. This is in no case better illustrated than by means of the extinct animals of the secondary strata, which are intermediate between reptiles and birds. Reptiles occur which approach nearer to birds than do living reptiles, while birds have points of structure found only in living reptiles. This evidence is so full as to render it probable that there is a continuous series of small steps between the two groups. Whatever is true in this respect for two surviving types of life, which now appear widely separated, may also be true for any other two types of which the fossil history is less perfectly known. Thus it becomes demonstrated that the gaps which divide classes from each other are in some cases, and, therefore, probably in all, a consequence of the imperfect record of them which the rocks have preserved. Sixthly, there was the evidence to be deduced from a study of the changes passed through by the embryo. For example, the egg of the common fowl shows, when the bird is first forming, that the lungs originate as branches from the alimentary canal. This character is parallel only among fishes, in which the swim-bladder similarly opens into the alimentary canal. A little later in the development of the bird, the parts of the brain present a resemblance in form and arrangement to the brain of a reptile, while finally the distinctive brain characters of the bird are developed by the enlargement and the growing backward of the fore brain. On no hypothesis of creation can these changes be accounted for; but, if the ancestors of the bird were animals allied both to the reptiles and to the fishes, then the animal, in its individual development, only repeats the grades of organization through which extinct progenitors must have passed. The conclusions derived from all these aspects agree in demonstrating the origin of life on the earth in the forms in which it is now known as a consequence of the continuous operation of natural law.

Whatever is true for the development of life as a whole must necessarily apply to man also. This is evident, because in plan of structures, mode of development, and variation depending on geographical distribution, his body follows the same law as those which regulate all animal life. Hence it is obvious that the forms from which the human race is derived must have

been analogous to those lower animals which most nearly resemble the human form. There need be no sense of degradation in recognizing the progression of our race which this view implies. The only question is. have we sufficient evidence to demonstrate the conclusion? Nothing could be more like the human skull than the skull of a young gorilla before the second set of teeth are cut, but the divergence in mature life is considerable; and in this way it is shown man can not be descended from any monkey of which we have knowledge. But the resemblances to the monkey type are so many and extend to such minute details as to enforce the conviction that the human and quadrumanuous types are both derived from an unknown ancestral form, the direction of development being different in the two cases. In form of brain the higher monkeys closely resemble man, and though the size of the brain is in the monkey altogether inferior, it is well known that the texture rather than the size of the brain is important in rendering it an organ of intellect. The muscular structure of man presents in different individuals innumerable variations, no small number of which are approximations to the muscular structures of monkeys; and several muscles of man are so imperfectly developed as to be often represented only by the sheath and a few fibers, so that as in the case of skin muscle, called the paniculus, the muscle practically performs no functions. It is, therefore, difficult to believe that such a structure was specially created, while it is very intelligible that it should exist in this rudimentary form as a result of descent from an animal type in which it was used to shake the skin. Other rudiments, such as the tail, represented in man by the coccygeal bones contained beneath the skin, and therefore invisible in the matured body, have no function and therefore can not be so easily accounted for on the hypothesis of design as they can on the theory of descent. Turning to the intellectual aspect of our species it was mentioned that most of the strong characteristics are met with in the lower animals, as has so elaborately been shown by Mr. Darwin. After some interesting illustrations that had come under his own notice, the professor passed on to speak briefly of some of the hypotheses which are put forward to explain the physiological development and

EVOLUTION.

variation of language as a consequence of climatic and other conditions. A passing reference was also made to the work which has been done in tracing the evolution of the higher moral qualities from their first foreshadowings in other animals, culminating in the efforts made by the different races of man to grapple by means of religion with the great questions of life and death, and the

meaning to man of his consciousness.

In the endeavors of science to fathom the secret of man's existence, a method of research is followed which owes its success almost entirely to the dominance of the moral over the intellectual faculties. There is thus a certain parallelism between the work of the scientific man and the efforts of the religious teacher. Science, therefore, may be looked upon in this point of view as a practical form of religion dealing with the material world. No important series of discoveries can be made by mere force of intellect; for it is only by the faithful pursuit of truth, by the courage to grapple with truth in whatever form it may present itself, by affection for the subject from which the mind can be turned by no accidents, by sympathy for the labor of other seekers after truth, causing an investigator at once to appreciate and profit by what others have done as well as to offer his own results as stepping-stones for workers abler than himself, that the conquests of the human mind have been achieved, and the conception of evolution has been made possible. Looked at in this way the pursuit of science rises far above its results in the solution of different problems, and becomes a fabric on which a superstructure of human happiness may be reared. The only fear to the lecturer's mind was that evolution may be accepted too rapidly and thus its moral effect, as a mental training, may be lost in the convenience of a formula. It was for this reason reference had been so constantly made in the previous lectures to the problems which evolution can not at present clear up, and which will demand a research the very means for which have yet to be discovered. If evolution proves to be the grand truth it is believed to be, the doctrine may fairly claim to be widely diffused, so that it may have a share in the advancement of our race.

Unavoidable Hemorrhage.

READ BEFORE THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

BY JOHN SANDT, M. D.

The subject to which I shall call your attention for a brief period is unavoidable hemorrhage, or placenta prævia, one which the obstetrician dreads, and justly so, on account of the danger to the life of the mother and child, it being one of the most dangerous accidents to which the child-bearing woman is liable. There are a great many other difficulties to be met with in obstetrical practice, but none to be more dreaded than this. In other difficult cases you can temporize, there is time to send for aid; but here your patient is in the most imminent danger from undue loss of blood, and over which your medical remedies have very little control.

I do not intend to take into consideration the causes of this difficulty—these are apparent and understood by

every practitioner.

I intend to make my essay as short as possible, so as to get over this duty I owe to this Society, and take up as little of your time as I conveniently can, because writing on a subject has always been and is yet a task, which I put off as long as possible; so that I must confess that I have not given the subject under consideration the thought and research which its importance demanded.

One of the most fortunate things to the parturient woman is, that this difficulty is not of more frequent occurrence. According to some statisticians it occurs once in 2,554 cases of labor. In another account, once in 2,596, once in 1,492, and once in 660 cases, which last is about the proportion I have met with it in my practice. There is a great difference, as you see, in the proportion of cases, as given by different statistics. There is also a great disproportion as regards the fatality to mother and child, as given by different authors. One gives it as 33 per cent, to the mother and 66 to the child, another 27 per cent., 8 and 7 per cent. A German physician states that in the course of 20 years by 150 accoucheurs, in 519,328 births there were 332 cases of placenta prævia, one in 1,865 cases; of these, 246 women recovered and 86 died, 26 per cent.; of the children 33 per cent. perished. Dr. Simpson gives reports that out of 110 children 73 were born dead, over 66 per cent. In 5 cases, 2 of the women and all the children died.

In regard to the treatment of these cases, this will depend upon the conditions of the womb, or, in other words, the different stages of the labor. The woman, in the latter months of pregnancy, will be taken with sudden hemorrhage, and will then send for her physician, and possibly by the time he sees her the bleeding has stopped; but his suspicions will be aroused, and, to satisfy himself, he should request an examination, and will generally be able to diagnosticate the trouble. He will then explain the nature of the case to the husband, and prescribe rest in the recumbent position, non-stimulating diet, with the head low, and perhaps prescribe some anti-hemorrhagics, and warn the family that he be sent for as soon as another hemorrhage should occur. In this way he may possibly be called to see his patient a number of times, and find that the bleeding has ceased by the time he arrives. But if the hemorrhage should still exist, he will have to check it, and here he can not rely on his medical remedies—he will have to depend more on mechanical than remedial means. The tampon is the great desideratum now. If properly applied and of the proper materials, he will generally be able to control it until the womb is dilated or dilatable, or until the laborpains come on, when the womb will generally be in such a condition that he can deliver the woman, which it is of the greatest importance should be done as soon as possible. I have, in all the cases which I treated, found the child high up after introducing the hand, and then turned and delivered by the feet. I did not trust to nature for the consummation of the labor; perhaps by rupturing the membranes and giving ergot, I might have obtained the same result. Detaching the placenta and rupturing the membranes is considered almost sufficient to arrest the hemorrhage, but I think it is deleterious to the child. Detaching the placenta in 66 cases 47 women recovered, 19 died; in 33 of these labor was terminated by turning, of whom 23 recovered and 10 died. Then again some writer asserts that detaching the placenta will have no effect to control the bleeding.

I have met with 3 cases of this trouble in the course of 25 years—a larger proportion than is generally given

by obstetricians. I will give you my plan of procedure: I was called to the first case about a month before the woman expected to be confined; she had a profuse hemorrhage, and on this account sent for me. By the time I arrived it had ceased. I suspected one of two things, either placental presentation or detached placenta. By making an examination, I detected the former. I prescribed rest in the recumbent position; and about a month afterward I was again called, and found the bleeding still going on after my arrival, and considerable pains. After examination, I found I could introduce my hand into the womb, ruptured the membranes, and turned and delivered the child quickly and safely. The woman had lost considerable blood, but made a good recovery. I had explained the nature and seriousness of the case to the husband, and I think my directions were fully carried out as regarded rest, etc., and to be sent for as soon as another hemorrhage should occur.

The second case I met with several years after. This patient had more frequent flooding, also during the latter month of pregnancy. The patient lived some five miles from my office, so that by the time I got to see her the bleeding had ceased. I think I prescribed opium, and acetate of lead, and rest, etc., and cautioned the husband to send for me immediately on the occurrence of hemorrhage, telling him the dangerous condition his wife was in. One day I was sent for, and when I arrived the flooding was going on. The womb was sufficiently dilated to introduce my hand and bring down the feet. The woman was delivered in a very short time, and without much flooding.

The last case occurred soon after, and was nearer home. In this case I used the tampon until labor-pains came on; then, as soon as I could introduce my hand, I turned and delivered. The mother and child both made

a good recovery.

In these three cases the head presented. Now it is a question with me, whether, if I had ruptured the membranes and given ergot, the result would have been as favorable. I attributed the result to my reaching the cases just at the right moment. I would like to hear a statement of the experience of other members of this Society.

Lightning Stroke.

READ BEFORE THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, AT BIRMINGHAM, IN APRIL, 1877, BY DR. L. E. STARR.

As it has not been my fortune to witness, or to have seen anything similar in the literature of the subject, I propose to give a brief account of two cases that recently came under my observation. On May 1st, 1875, I was summoned to see C. N. and N. N., brothers, laborers, who, while en route to church, halted under a small cedar tree, in an open place and about sixty yards from the residence of a freedman, to get shelter from an approaching shower of rain, N. N. leaning with his back. against the tree, and C. N. standing very near, in front. In the course of a few minutes the electric fluid came down the tree, and from the violence of the shock they were prostrated and rendered insensible. In about ten minutes after the report made by the stroke of lightning, the inmates of the house near by heard a noise made by the injured parties, and went out and found them trying to get on their feet, though not sufficiently recovered to stand or to anwser questions.

Dr. J. M. Williams, a retired physician, being near, reached the scene within half an hour, and administered brandy until reaction from the shock was established. In two hours after the accident I arrived, and found C. N., aged twenty-six, with a slight bruise over the right eve, the conjunctiva of which was considerably injected, and suffering intense pain in the head; some nausea, and vomiting; pulse 80, rather feeble; patient rational. Morphia sulph. gr. 1 was administered, and he very soon became quiet, and remained so for eight hours, when he became restless, with his mind wandering; at which time I saw him again, and administered Chloral Hyd. gr. xii. every twenty minutes until 36 grs. had been given, which gave perfect relief in a few minutes after the third dose, and procured a sleep of eight hours; after which he had no further trouble, except some dizziness of head, which he complained of after exercise.

for thirty days.

CASE TWO, N. N., AGED TWENTY-TWO.

It will be remembered that N. N. was leaning with his back against the tree, in a standing posture, and

would reasonably have received a greater shock. It would seem that, from the statements of the patient. and the appearance of the tree and patient's clothing, which was of heavy woolen goods of home manufacture. that the electric fluid came down and split the bark of the tree immediately against the spine of the scapula of N. N., where a portion of it passed through his clothing, making a circular opening of about 11 inches in diameter, which presented very much the appearance of that made by a musket-ball, only it was larger. Passing through, it carried away the integument and the cellular tissue beneath, the depth of 1 inch in an oval form, to the extent of 2 by 1½ inches. From four to six inches around this opening the cuticle was very much reddened, and in some small spots carried off, and in others blisters had formed. Passing down the lumbar region, to the buttocks and posterior part of the thigh, all presented the same appearance as that surrounding the opening of the scapula; then passing down the left leg, making a small opening in the calf, and then destroying the integument and tissues from the tendoachillis around the outside of the ankle joint to the instep, for six inches wide, bursting the shoe in pieces and making an opening over the tarso-metatarsal articulation of the small toe. Where the surface was carried away it presented the appearance as though it had been done with molten metal, so intense was the heat, yet the clothing was slightly burned; and although the laceration was so extensive in N. N., yet the shock to the nervous system was not so great as it was in the case of C. N., for reaction occurred much sooner. \frac{1}{2} gr. of sulp. morphia was administered to relieve pain, and his wounds dressed with cotton-wool, moistened with treacle, and very soon he became quiet.

In this case there was considerable difficulty in deglutition; in attempting to swallow fluids, they would gush out of the nose. It is worthy of note that this patient had been troubled for eight years with polypus of the nose, which came away the third day after the accident. Chloral hyd. was administered in xii. gr. doses sufficiently often to keep the patient quiet, and his wounds, after the first dressing was removed on the second day, were treated with solutions of carbolic acid until the sloughs came off, and the resulting ulcers treated with

tannic acid 1 oz., water 4 oz. This mixture protected the surface perfectly from the air, and from excoriation, by forming a thick crust under which granulations rapidly sprung up, and where the ulcers were not deep the surface was entirely healed when the first crust came off. I have long been in the habit of using this mixture in the treatment of ulcers, and especially those following burns. After suppuration was established, tonics, brandy, and nourishing diet were relied on to keep up

the strength of the patient.

All the wounds sloughed readily and did well, except the one on the ankle, which moved very slowly, in consequence of the nature of the tissues involved; but after the twelfth day it began to loosen and a superficial slough came off, but a deep one still adhering. On the fifteenth day it began also to loosen, and on the eighteenth day the posterior peroneal artery was severed with but little loss of blood. It was feared almost from the beginning that the leg would be lost, but it was thought best, as the patient was holding up well, that every attempt possible should be made to save it; but after the deep slough began to loosen, it was ascertained that the fibula was blackened at its inferior extremity, and by the suppuration up its track it was almost certain that it had lost its vitality throughout its whole extent. Then amputation was decided on and consultation sent for, but owing to some unavoidable accidents the consulting physicians did not get in for two days, which time had produced considerable difference in the appearance in the case; but on the fortieth day from the receipt of the injury Drs. Crawford and Davis, of Centerville, saw the case in consultation with me, and by this time it was deemed necessary—as the inflammation had extended above the knee-to amputate at the middle third of the femur, which was done, Dr. Crawford operating.

Reaction after operation took place slowly, but was finally established, and the patient made a good recovery, with no other inconvenience save the loss of the

limb.

Some six months after the operation was performed, the limb was disinterred, and upon examination it was discovered that the fibula was black through its entire extent.

Sulphate of Atropia in Sweating.

TRANSLATED FOR "MEDICAL NEWS," FROM THE "TRIBUNE MEDICALE,"
BY R. B. DAVY, M. D.

At a late meeting of the Academy of Medicine, of Paris, attention was called to a very interesting work on the use of Sulphate of Atropia in sweats, and particularly in those of phthisis. The work first appeared as the inaugural thesis of M. Royet, and consists of a collection of facts brought out in the clinics of Professor Vulpian, who first used the agent in this capacity in 1873, at the suggestion of several foreigners—Wilson, of America; Sydney Ringer, of England; and Froentzel, of Germany. All those who attended his clinics had an opportunity of seeing its marvelous effects; and we can testify to numerous successes during the last three years. We are convinced that the Sulphate of Atropia is more powerful than any other anti-sudorific.

Vulpian prescribes it in granules of half a millegramme each, and finds it is seldom necessary to give more than two. It is better to give but one the first day, two the second, and, if necessary, three on the third. Each dose is to be taken two or three hours apart, and the last, two or three hours before the sweat is expected. It is sometimes necessary to continue the remedy for several days, to guard against return of the trouble.— Progres Medicale,

fifth year. No. 47, page 895.

In reading the above, we were surprised to find that no allusion had been made to our townsman, Dr. Bartholow, who, in a paper read before the Academy of Medicine a few months ago, claimed priority in the abovementioned use of the drug. Our French brethren are either in ignorance of his claim, or else not disposed to respect it.—Translator.

SELECTIONS.

Alcohol.

At a meeting of the Paris Academy of Medicine, held October 16, 1877, Dr. Lunier read a very interesting paper entitled "Some Considerations on the Hygiene of ALCOHOL. 23

Alcoholic Drinks." In the article appear the following facts: The alcoholic beverages consumed in France are wine, cider, beer, brandies, and other liquors. Wine is the national beverage, the mean consumption of which for ten years has been fifty millions of hectoliters a year, which is about 120 liters for each individual. The consumption has followed the production in its oscillations; but, altogether, it has been on the increase for the last fifty years. It was from 55 to 60 litres per individual from 1829 to 1833, but to-day it is more than double.

Wine is the common drink in 72 departments; yet in fifteen of these its consumption is only 38 to 80 liters per head, while in the 57 others it is 88 to 360 per head.

The consumption of cider is diminishing. In twenty years it has decreased from 24 to 20 liters per head; which is hardly to be regretted, because of the inferior qualities of the cider. Brandy is now taken to facilitate digestion of the cider, and the more one takes of the last, the more is needed of the first.

The consumption of beer has increased progressively for fifty years—in 1829 it was only 84 liters per head,

now it is about 22.

The consumption of alcohol has increased progressively for forty years. It was two liters per head in 1837,

and to-day it is nearly three.

The districts which consume the most alcohol are those which do not drink wine. The contrast in this respect is very striking. Statistics confirm the opinion advanced by M. Bergeron, in 1870, in his report on winegrowing, viz: that the injurious effect of inferior manufactured alcohol is worse than that of brandy made from wine.

From the facts collected by M. Lunier, it has been ascertained—

- 1. That as far as the cases of accidental death, caused by excess of drink, are concerned, it is in districts which sell most alcohol where the most deaths from this cause occur.
- 2. That an examination of the results of the application of the law to drunkenness, from 1874 to 1876, lead to the same conclusions. Cases of habitual drunkenness are five times more numerous in the districts where alcohol is taken than in those where wine is the principal beverage.

3. That it is the same with insanity caused by alcohol—the proportion is almost everywhere in direct ratio to the consumption of alcohol, and particularly cheap alcohol. White wines taken in excess are almost as dangerous in this respect as brandy.—La Tribune Medicale. Translated by R. B. Davy, M. D.

Mr. Spencer Wells and the Samaritan Hospital.

On Wednesday last Mr. Spencer Wells performed ovariotomy for the 404th time at the Samaritan Hospital. After the operation he remarked that it was twenty years since he first joined the institution, which was then a dispensarv. His first ovariotomy in connection with the institution was done about twenty years ago, and fortunately the first three cases recovered. Had they proved fatal, the history of ovariotomy would probably have been different, and the operation might have remained under a cloud. The mortality in each quinquennial period had steadily diminished; it being one in three during the first five years, one in four in the next five, and one in five in the third five years. Still more recently it had been only one in ten. The total number of deaths among the 404 cases was 99. Other operations than ovariotomy had been done in the hospital; for example, amputation at the hip-joint, removal of the lower jaw, and operations for vesico-vaginal fistulæ and ruptured perineum, and these showed that better results were obtained, when the same care was bestowed upon them as upon the ovarian cases. The hospital was not perfect, but practically it afforded very good results. Mr. Wells then mentioned that he was now retiring from the active work of the hospital, having been elected consulting surgeon, and that this was probably the last operation he should perform there, unless he operated again next week. But it had been arranged that public consultations should be held at the hospital every Friday; due care being taken to respect the feelings of the patients.

Mr. Wells' connection with the hospital, for whose reputation he has achieved so much while establishing his own unrivaled position, will not be entirely severed, for it will still enjoy the great advantage of his unequaled

experience, calm, ripe judgment, and valuable counsel. But the loss the institution has sustained in losing him as an operator is severe, and probably irreparable; for not only is it unlikely that any one with equal ability will enjoy his unique opportunities, but it will be long before qualifications and endowments for this special work, such as characterize Mr. Wells, will be found again united in one person. We believe that in public and in private Mr. Wells has operated about 900 times; but there are now so many and competent operators in the field that cases will be more widely distributed than heretofore; fewer, probably, falling to the lot of any one man in a like space of time. Mr. Wells' teaching and example will largely influence his disciples, who are to be found not alone in this country, but in every quarter of the globe. Nothing, we feel sure, would more gratify him than that the noble work he has been so instrumental in placing on a sound and permanent basis should be carried on and developed to the utmost attainable perfection. Few men have had the privilege of contributing so largely and directly to the relief and welfare of their suffering fellow-creatures as Mr. Wells, and probably fewer still could, with more justifiable pride, say, if called upon to justify the labors of their life: "Si monumentum quæris, circumspice!"—Lancet, December 15.

Origin of Bacteria.

Prof. Tyndall, in a letter addressed to the Royal Society, through Prof. Huxley, dated from Alp Lusgen, containing the results of certain experiments bearing on the development of bacteria, is sanguine enough to state that the question of "spontaneous generation" is practically set at rest for the scientific world. We fear the news is too good to be true, and that much yet remains to be done before the last note in that controversy is sounded. In view of the differences of opinion that exist, not only between the two great camps of the heterogenists and panspermists, but also among those who are committed to one or other of these views of the origin of bacteria, it may be instructive to state what is positively known at present in regard to these

minute organisms. Placed by Prof. Haeckel, in his "Regnum protisticum," which receives and embraces all organisms rejected both by the botanist and zoologist, bacteria may be regarded as unicellular, non-nucleated bodies, living in solutions of animal and vegetable matter in certain stages of their decomposition; but whether inducing that decomposition, as most experimenters believe, or merely associated with it, is uncertain. They vary in form, sometimes being spherical, as in Micrococcus, which appears in the earlier stages of putrefaction, and in which the spheres are connected by an intercellular substance that is confluent with the cell-membrane of each plastide; sometimes, as in Bacterium termo, being dumb-bell-like, and appearing in the later stages of decomposition. The movements of organisms of this form are active as compared with those of the Micrococcus, and, according to Messrs. Dallinger and Drysdale. are affected by means of flagella attached to the opposite poles of their body. Another form of bacterium is the Bacillus, which, at first forming short and thick rodlike bodies, become ultimately elongated and slender. These exhibit tolerably active movements, and may be seen in the form of chains; and yet other varieties, or perhaps species, are the delicate-jointed Leptothrix filaments, with their slow undulating motion; and, lastly, the Vibrio and Spirillum forms. Those that are most interesting in a professional point of view are the Spirillum, found in large numbers in the blood during the active stage of recurrent fever; the Bacillus anthracis, which occurs in the blood in cases of malignant pustule; and a motionless species of Bacillus found in the blood in splenic fever.

It is evident, then, that under the general term of bacteria we have to deal with numerous forms of low organisms, the life-history of which has been in no one instance completely worked out, so that it is uncertain whether these forms represent different species, or are merely the modifications under different conditions of one polymorph common to all. Here and there, indeed, a fact has been made out in regard to their mode of reproduction, which, however, affords little aid to the understanding of their wide dissemination and constant presence in the air, if the pangenetic theory be correct. In Micrococcus reproduction appears to be effected by

fission, which, if incomplete, leads to the formation of "rosary" or "necklace-like" chains. In the Bacterium termo it is accomplished by fission chiefly taking place in the longitudinal direction, the resulting cells either separating at once, or, owing to the swelling of their cell-membranes, forming a jelly-like mass or colony, designated by Cohn the "Zooglæa" form. The juxtaposition of such cells on the surface of a decomposing infusion constitutes a pellicle, the "Mycoderma" of Pasteur.—Lancet.

Convulsions in Typhoid Fever. CLINIC, BY J. M. DA COSTA, M. D., PHILADELPHIA.

THE rather sudden termination of one of our cases of typhoid fever, toward the close of its third week, makes it incumbent on me this morning to explain to you the mode of death, and to point out to you some uncommon features of the speedy and unexpected end.

Just as convalescence appeared definitely established, and the patient seemed out of danger, he was seized with general convulsions, and in a few moments expired.

Albert McD., a seaman before the mast, was brought, December 30, 1876, from shipboard into our wards, with the statement that he had been sick for two weeks, the principal symptoms being great prostration, fever, headache and diarrhœa. The remainder of the crew were healthy, and no cause was assigned for his illness. He was twenty-one years of age, unmarried, of good physical frame, and, to all appearance, a man of temperate habits.

His axillary temperature on the evening of admission was 104°. During the night he was delirious, but the next morning he responded intelligently to questions, and gave a connected account of his illness. He stated that he had been suffering with diarrhœa for a week before, being regarded as unfit for work, and that he had been in his berth for only ten days before admission, during which time he was pursued by strange dreams. The headache was principally frontal, and was severe and constant. The record taken, on his admission to the hospital, speaks of his tongue being dry and coated from the center to the edge, and displaying a red wedge-

shaped patch, its base corresponding with the tip of the tongue. The gums and teeth were covered with sordes, and the breath was offensive. There was complete loss of appetite; the bowels were moved twelve or fifteen times a day, the discharges being watery. The abdomen was tympanitic, and a few rose-colored spots were seen on the lower part of the chest and abdomen.

The kidneys performed their function well, and the secretion was of a light amber color, acid in its reaction, of specific gravity 1020, and contained a small amount of albumen; a microsopical examination failed to discover casts.

Passing by the minor details of the case, we notice, first, that the statement of the patient, that he had been ill for nearly three weeks, was confirmed by the temperature observations. The highest point marked was 104°, on the evening of admission; following this, the evening exacerbations, after each morning's fall, showed a declining series. Nor was the improvement to be found only in the vanishing fever heat; there was no fresh eruption of rose-colored spots, indeed, those noticed upon admission were gradually fading, the discharges were reduced and under control, the tongue was cleaning, and he slept at night without delirium, when, without warning or apparent cause, we noticed that he had a violent, general, and rapidly fatal convulsion.

Now let us see if the autopsy explains this unlookedfor result, or is able to throw any light upon the cause of death. In cases of sudden termination of typhoid fever, we naturally think of intestinal perforation, of exhausting internal hemorrhage, or of cerebral effusion; in the present case this is not a subject merely of speculation, as we have the organs before us; and it is to

their appearance that I invite your attention.

Autopsy.—The lungs, with the exception of some engorgement posteriorly from hypostatic congestion, are found to be healthy and crepitating throughout. There is no evidence of pleurisy; there are no adhesions or effusions. The heart weighs 10½ ounces; the left side is firmly contracted, the ventricle being empty, the auricle full of fluid blood. The right side seems flabby, the ventricle containing some fluid blood and a white, fibrinous clot, the auricle having fluid contents and no clot. The cavities, walls, except as regards the flabbi-

ness of the right side, and the valves appear healthy.

The stomach shows some congestion of mucous membrane, and holds coagulated milk; the membrane is reddened, and is softer than normal. The peritoneum contains some serous fluid, but exhibits no other sign of disease. The liver is healthy in every respect. The spleen is large and flabby; it weighs 19 ounces, and in section displays a current-jelly appearance; the tissue breaks readily under pressure. The mesenteric glands generally are enlarged. In the small intestine there is no evidence of ulceration or perforation, but there is a marked increase in size in Peyer's patches, and in the solitary glands of the large and small intestines. These look like shot under the mucous membrane; Peyer's patches are very much infiltrated, and darker in color than the surrounding parts. There is nowhere a sign of perforation.

The kidneys weigh seven ounces each. The left is large, firm and irregular. The capsule is thickened, adherent, and on removal leaves a markedly granular surface. Upon section, a urinous odor is noticed, the organ is congested, especially in the pyramids, and the cortex appears slightly swollen. A similar condition is found in the right kidney. The pathologist has just given me a report of the microscopic examination of the kidneys in this case, in which he pronounces them to be in a state of granular degeneration. The supra-renal capsules are normal. The brain is rather soft, but is

perfectly natural on gross examination.

Now, looking at the post-mortem results, we find in the kidneys alone sufficient ground for the explanation of the convulsion seizure; and its uræmic nature is further rendered most probable by the presence of albumen in the urine, and by the well-known fact of the favoring element of the accumulation in the blood of the products of waste and disintegration of tissue dur-

ing the fever process.

Now as to the direct influence of the typhoid fever poison itself. Could the nervous system be so excited by this as to produce a convulsion? In answering this question you will naturally think that the nervous systems are among the most prominent in typical cases of typhoid fever; you will recall the irregular chills at the onset of the disease, the pains in the loins and limbs,

the ringing noises in the ears, the giddiness, the severe headache, and the profound prostration; you will reflect on the restlessness, the subsultus, vigilance and delirium which belong to the course of the complaint almost as surely as do the diarrhoea and fever; you will think of all these evidences of great derangement of the nervous system, and be prone to conclude that convulsions are likely to be among them; but they are not. Convulsions in typhoid fever are rare, so rare as to be regarded almost as a clinical curiosity, and to be set down as something outside of the regular history of the dis-In nearly three thousand cases of enteric fever admitted into the Fever Hospital in eight years, convulsions occurred in only six, Murchison tells us in his classical treatise. In typhus they happen much more frequently.

When I make these statements I allude to general convulsions. Spasmodic movements, such as jerking of the tendons, hiccough, twitchings of the muscles of the face, are, we know, not uncommon in typhoid fever; and choreic movements, rigid contraction of the muscles of the extremities and even cataleptic states, though far from common, have been often described. But convulsions from any cause in typhoid fever are extremely infrequent, and the most unusual kind is from the direct

influence of the poison on the nerve centers.

Epilepsy is among the causes of convulsions during an attack of typhoid fever. The wonder is that it does not show itself oftener. The reason I suppose to be in the strange law by which the affection is temporarily obliterated when an epileptic is stricken with an acute disease. We see whooping-cough suspending it, fevers lulling it. But the malady is not dead, it is slumbering; and it may start up vigorously during the last stages of the fever, or during convalescence. I attended a case some time ago, in which three epileptic seizures happened in the course of twenty-four hours in the third week of the enteric fever. There had been no kidney complication, and no cause other than epilepsy could be discovered for the attack. The patient was very drowsy after it, yet the recovery was not much retarded by the accident.

Typhoid fever may become complicated in its course with apoplexy, and the effused blood lead to such dam-

ages as to give rise to long-continued palsy. A case of this kind, with right-sided hemiplegia of two years' standing, came under my notice recently at the clinic of the Jefferson Medical College, in the person of a sturdy young farmer. Where the clot is effused on the surface of the brain, convulsions may readily be asso-

ciated with the apoplectic seizure.

I told you, at the beginning of the lecture, that I believed uræmia to have determined, in the case we have been investigating, the fatal convulsion. Irrespective of the diseased appearance of the kidneys, which I have submitted to your inspection, you may judge, from the description I have given you of other exciting causes, and how they act, that they do not here apply. Let us now study a little more closely how the uræmia with

its dire results is brought about.

The noxious urinary ingredients may be absorbed into the blood in consequence of the distension of the bladder. It is well known what a paralyzing effect low fever exerts on the muscular coat of the bladder. The viscus may become greatly distended, as we can recognize by percussion, although the patient seems to be voiding natural amounts of urine. The result of the accumulation may be the poisoning of the system with urea or the products of its decomposition. I shall not readily forget the impression made on my mind by a case of this kind seen a number of years ago. The young man lay for several days in a state of semi-coma, associated with marked twitchings of the muscles of the face. He was more than once on the verge of a general convulsion; passing a catheter several times a day after the difficulty was recognized, removed the untoward symptoms

But the most common cause of the uræmic poisoning, and of the convulsions that may attend it, is to be found in disorder of the kidneys. If, indeed, you will collect the recorded cases—they are, it is true, not many—you will find a condition of diseased kidney or antecedent albuminuria in the majority of them, although the connection between this and the convulsion may have passed unnoticed. But is albuminuria always antecedent? Not to needlessly obscure the subject in your minds, but to warn you of a source of fallacy, I must state that, in some cases of fever, there may be an ex-

cess of urea and the products of tissue-waste in the blood, progressing even to the production of uræmic convulsions, without the presence of albumen in the urine. The secretion in this case is scanty. The urea is found in deficient quantity in the urine; while in the blood we find alterations produced by its presence, or of the substances it gives rise to. We may have to seek the advice of the professional chemist to determine this point; and I have more than once been most efficiently aided in solving the obscure clinical problem by the skill of our pathological chemist, Dr. Hare. Again, convulsions, at any time and from any cause, may themselves produce transient albuminuria, so that the detection of albumen in the urine for a day or two after the attack is not sufficient to establish its uræmic character.

In cases where albuminuria and undoubted disease of the kidney exist, and convulsions have happened does the renal difficulty antedate the fever, or is it a complication? It may be either. Chronic nephritis grants no immunity from typhoid fever; on the other hand, an engorgement of the kidney, an accumulation of epithelium in the tubules, and the beginning of a parenchymatous nephritis are met with, as part of the typhoid fever process, and may be sufficient to clog the kidney to such an extent as to interfere with its function. You will ask me how are we to know if the kidney disorder belongs to the fever or not? We can not always know. It is true that considerable quantities of albumen, the presence of markedly granular or fatty casts would determine the antecedent nature of the malady. But some tube casts may also be found in the urine coming from the hyperæmic fever kidneys; and we may not detect them at one examination in the urine of a chronic renal affection. The presence of albumen from the onset of the fever would greatly favor the supposition of the latter; for in typhoid fever albuminuria is not an early symptom. Again, we may have the lesions determined by the fever process adding to the embarrassment of an already diseased organ; and thus producing the inaction which has led to the uræmic seizure. Such I take it happened in the case which we have been discussing this morning.

Now, I have conveyed to you a wrong impression if I have led you to suppose that convulsions must always

happen in consequence of the uræmia met with in fevers. Coma is, perhaps, the more common result; or a state of half-coma, with convulsive twitchings. We have recently had a case of uræmic coma in the hospital,

which some of you have seen.

But I must revert to the subject I have been attempting to elucidate—convulsion in typhoid fever. We have found that it may be due to a variety of causes, though uremic is the most prominent. The prognosis will, of course, depend very much on its exciting cause. It is generally unfavorable. The most favorable prognosis is, if the seizure be in an epileptic, and an outbreak of epilepsy, or if the subject of the convulsion be a child overcome at the outset with the fever poison, or be affected with an apex pneumonia; of the uremic convulsion, that associated with retained urine in a distended

bladder justifies the most hope.

The treatment, too, will largely depend on our knowledge of the cause. I will merely point out how impor-tant it is to take care that the broken-down waste is not retained in the body, and that the kidneys are kept freely acting; and how readily careful attention to the state of the bladder may prevent a serious mishap. During, or soon after, the fit we must see to it that the head is kept cool, and the flow of blood in the body equalized. Cupping at the back of the neck, and even general blood-letting, suggest themselves among the remedies to diminish the vascular tension. These remedies are potent also for evil; and it must, in an individual case, always remain a matter for judgment, whether the patient is in greater danger from a local injury to brain, or lung, and the general turgescence of the vessels, or from the extreme debility that attends the fever. In deciding this the pulse and the state of the first sound of the heart are our chief guides. But I can not now further enter into this subject; it involves much, having a wider range than can be accorded to my discourse. Let me only add that, if the convulsion be due to apoplexy, and associated with one-sided palsy, the abstraction of blood seems to me imperatively indicated. If the convulsions are epileptiform, in a subject predisposed to epilepsy, bromide of potassium will be our main reliance. But, whatever treatment be employed, let it be active, and take into account the pathological condition which has occasioned the outburst.—Medical News and Library.

On The Rational Treatment of Dysentery.

In the Philadelphia *Medical Times*, October 27th, Dr. H. C. Wood prints an admirable paper on this subject, with cases, which we give, in part, as follows:

Every practitioner of medicine must be acquainted with the fact that anginas, or sore throats, are divisible into two classes—those which are mere local inflammations and those which are the expression of a graver malady, i. e., of a constitutional condition, or, as the

fashion of the day terms it, a blood-poisoning.

It may not be equally well recognized, but it seems to me equally true, that all dysenteries may be similarly divided. One man is exposed to wet and cold, and gets a sore throat, while his neighbor, under a similar influence, falls ill of dysentery. One man is thrown in contact with the diphtheritic poison and gets a constitutional sore throat, whilst another takes in the infection of a crowded, unclean camp and suffers from a constitutional dysentery.

Any practitioner called to treat a severe simple angina uses both constitutional and local measures; but it is scarcely a misstatement to affirm that the chief reliance is always on the nitrate of silver or other local remedies which are employed. Even if the sore throat be the local manifestation of a constitutional disorder, local applications are made by almost every physician, and

by many they are used very energetically.

If we turn to inflammation of the other end of the alimentary tube, we find the treatment in vogue very different from that practiced in anginas. Local measures (except the use of opium) are employed very imperfectly, or, in the vast majority of cases, not at all. The object of the present communication is to call attention to this anomaly, and to enter a plea for the energetic and wide-spread trial in colitis of local treatment.

This disuse of local applications in dysentery is largely, no doubt, the result of our former inability to make aplications to any other than the extreme lower portions of the colon. By the use of forced enemata, so called, we are now, however, able to reach every part of the

large intestine.

In giving such injections, it should be first remembered

that the name is a misnomer; that no force should ever be used. The patient should be brought to the edge of a hard bed, placed in a position somewhat resembling that of a lithotomy, his buttocks resting upon a hard pillow in such a way as to elevate the pelvis, and cause the injected fluid naturally to flow downward and inward. A well-oiled, smooth, somewhat flexible, hard tube, with openings in the sides (an esophageal tube will answer well), and with a closed end, must then be gently and slowly introduced from eight to twelve inches into the rectum. The free outer end of this may be connected with a Davidson's syringe, and the fluid thus be slowly pumped in. A better plan is to unite it with a flexible india-rubber tube, in the end of which a funnel is inserted. This being elevated five or six feet, the water is poured in, and by its own weight, with irresistible gentleness, forces its way into the gut. Instead of a funnel being employed, the tube may be so arranged as to empty a bucket or other reservoir of water placed five or six feet above the patient. A direct connection may be made, or the principle of the siphon taken advantage of. Finally, the so-called fountain syringe may be substituted. In any case, the liquid should be about the temperature of the body, so as not to provoke peristalsis by the stimulus of heat or of cold.

Our experience with other portions of the body would teach us that different forms and stages of dysentery require variety in the character and strength of applications. This no doubt is the case; but my experience in angina led me at once to fasten upon nitrate of silver in these experimental trials, and this remedy has worked so well, that, with the few opportunities offered, no other

has been applied.

Drachm doses of the nitrate have in no case produced any constitutional symptoms, and doses of less than forty grains have not accomplished much good. Twenty-five grains to the ounce is a very common strength for use in angina, and when a drachm of the nitrate is dissolved in three pints of water for an injection, the strength of the solution is only a little over a grain to the ounce. The period of application is, however, much longer than in the case of the throat, and the mucous membrane of the gut is probably more sensitive. The injection usually comes away in from five to ten min-

utes, but I have often seen it retained twenty minutes. I have always provided common salt, so that a solution of a chemical antidote would be at once thrown up the rectum if symptoms of general action were developed. No occasion has ever occurred for its use, but in the present stage of our experience it would perhaps be safer to use the salt, if at the end of ten minutes there are no indications of the expulsion of the silver solution.

Chronic diarrhoea, so-called, is undoubtedly, in the majority of cases, really a chronic dysentery, i. e., a chronic colitis. Notwithstanding all that has been written, a considerable experience in my own practice, and that of others, has convinced me that it is not always possible to make a positive diagnosis in this class of cases as to the seat of the affection. When the disease is an enteritis, injections must fail to reach the affected part, and consequently fail to do good. This introduces an element of uncertainty into the results of treatment, and must be expected to give rise to an occasional disappointment.

He directs special attention to the fact that of the six cases, reported in this paper, four of them were in the hospital from one to seven weeks, and had been treated with the ordinary remedies for chronic dysentery before the nitrate of silver was used; and that there was no change of diet at the time of injection, and that no medicine, save a little opium, was given by the mouth; yet four injections, at most, suffered for the worst case. He found that small doses failed almost entirely, yet yielded readily to injections of forty grains of the salt.

Dr. Suesserott, of Chambersburg, Pa., writing to Dr. Wood, in reference to the above paper, says he has been in the habit of using "a cathartic that will act on the entire length of the alimentary canal; one that stimulates the liver, so as to secure the effect of the newly secreted bile on the inflamed mucous membrane, and also by its action on the lower portions of the tract remove any matters that might be morbific agents. This to be followed by an often-repeated appropriate dose of laudanum. For an adult he prescribed hydrarg, chlor, mite, gr. viij, pulv. aloes, gr. x, pulv. rhei, gr. xii, to be taken at one dose, and, after two free evacuations, tinct. opii gtt. x, to be given every hour, until all disposition to go to stool shall cease."

He says he has used this remedy for years, modifying it according to the age and circumstances, with gratifying results.

Another prescription he uses is, for an adult, onequarter grain muriate morphia, combined with four or five grains of common table salt, to be repeated every three hours, until dysenteric symptoms disappear. This mixture, modified to suit the age of patient, he says, gives uniformly good results in those cases of dysentery following the diarrhœa of infants.

Salicylates in the Treatment of Acute Rheumatism.

WE lately noticed some of the results which have been obtained in this country by the use of salicylates in the treatment of acute rheumatism. The subject has been under discussion in Paris, and some of the leading French physicians have expressed their opinions concerning the new agent. On the whole, the results confirm fully those which have been obtained in Germany and in this country. The discussion of the subject was opened at the Academie de Medecine by M. Germain See in an elaborate review of the properties and action of salicylic acid and its salts, and an enthusiastic advocacy of its use in a considerable number of diseases. His experience of its use in rheumatism extended over fifty-two cases, of which, however, only nineteen were febrile. Twelve of the febrile cases had had previous attacks, varying in duration from three weeks to three months. In all, with but one exception, the attacks were cut short by the salicylate in three days. Neither the age of the patient, nor the previous duration of the disease, nor the extent of joint-affection, influenced the result. The only case of failure was one in which the acute rheumatism, beginning in four joints, remained localized to the wrist. He agreed with other observers that the first effect of the action of the salicylates is the cessation of the pains; this occurs in from twelve to eighteen hours; the joint swelling ceases in from one to three days, and motion is easy after the third day. The pyrexia, in some cases as high as 105°, never disappeared before the cessation of the pain. Stricker--who first called attention to the beneficial effects of the

treatment in rheumatic fever—asserted that cases of subacute rheumatism derived little benefit from the treatment, and his observation has received a certain amount of confirmation in this country. The experience of M. See does not, however, corroborate this. Out of thirty-three cases of subacute rheumatism, he stated, there was not a case which was not cured in two or three days. M. Herard confirmed fully the results obtained by M. See, and mentioned one case in which quinine in large doses had failed, but the salicylate treatment effected a rapid cure in two days.

* * Perhaps, however, the most valuable testimony to its use was contained in a report which had been obtained by the military medical authorities, relating to 181 cases of acute rheumatism, in only 7 of which the remedy had no effect, while in 110 of the cases, which were carefully followed, the patient was cured in 94 cases in from twenty-four to sixty hours.

The opinions expressed regarding the details of its administration and effect are of considerable interest. The quantity which M. See believes it is necessary to administer daily is two drachms and a half, to be taken in five doses. This corresponds to about a drachm and a half of salicylic acid. Gusset de Mussy asserted, however, that equally good results can be obtained if a smaller dose was first employed, and gradually increased up to one and a half or two drachms. Lepine, on the other hand, advocates larger doses, of two or three drachms of the salt of soda or ammonia. The large doses are, he believes, borne quite well, if given in divided doses-an opinion which is, on the whole, corroborated by the experience of English physicians. M. See, however, believed that some of the cases of sudden death during its administration, which have been recorded in Russia and Germany, were due to the depressing effect of the large doses employed.—Lancet.

Excipients.

BY L. E. SAYRE, PH. G.

Before the days of glycerine, pill makers, as well as pill takers, had good grounds to complain. The former—because his stock of ready-made pills had to be very

frequently renewed, in order to present a soluble article; the latter—because it was not unfrequently the case to find, instead of pills swallowed, it was something nearer the insolubility of bullets, for, despite all the solvent fluids of the stomach, they persisted in passing off whole, undissolved, unchanged. The universal excipient was gum arabic, tragacanth and syrup, water, or a combination of them—confection rose. To this subject, of late years, more interest has been paid than before, which has given rise to a number of suggestions as to excipients.

The writer, having a considerable experience at the compounding counter for a number of years, has tried almost every excipient published, and tested many of his own. He came to the conclusion that, at the prescription counter, three or four excipients are absolutely

necessary for elegant work:

1. A liquid containing glycerine 3 parts, alcohol 1 part. It is best to keep this in a wide-mouthed bottle. The cork should be perforated by two holes; one for an exit tube, another for a bulb, so that by pressure upon the bulb, the liquid will come out of the tube, drop by drop.

2. Soft excipient, containing grs. lxx. tragacanth and

3j. glycerine.

3. Hard excipient. Tragacanth 3ij. and glycerine 3j.

4. Adhesive excipient, composed of bals. fir 1 part,

resin 14 parts, wax 14 parts.

It would be too tedious for me to describe the merits of each of these separately; but one in regular practice, who furnishes himself with this list of excipients always on hand for immediate use, will in time find they are indispensable. As to ready-made pills, glycerine unquestionably is the only-article which will keep them soft

and soluble for any length of time.

'Tis true there are many other articles which the expert brings to hand in order to bring his mass to the nice condition called pillular. For example: iodide of iron pills need a little thickening with pulv. glycyrr., before adding the adhesive excipient; some gum resins need a little alkali, soap or carb. potass; oleo resins need a little magnesia, copaiba (about one-sixteenth of its weight calcined or its own weight of carbonate). Articles of fatty nature, also croton oil, creasote, etc., crumb of bread.

The great point in nice pill making is to have a well educated idea of firmness and adhesiveness. Plasticity is a well balanced union of these two, I might say opposite, forces. Its presence gives the perfection to pill mass, sufficient softness to roll out with ease, with firmness requisite to enable the pill to maintain its correct shape.

New York Academy of Medicine.

Stated Meeting November 19, 1877.

DR. ISAAC E. TAYLOR, CHAIRMAN.

"DOES MORPHINE EXERT ANY DELETERIOUS INFLUENCE UPON THE
CHILD WHEN ADMINISTERED TO THE MOTHER
DURING PARTURITION?"

Dr. Salvatore Caro read a valuable paper upon the above subject, and drew attention first to the fact that the primary effect produced by morphine was upon the nervous system. Administered in proper doses, it was simply an anodyne and agreeable stimulant. used with the intention of producing pathological rather than physiological effects, it reduced the action of all the organs except the skin, and in that manner diminished the oxygenation of the blood, and such deleterious effect might be transmitted to the child. The causes which contributed to the production of asphyxia in the child during labor were noticed-such as obtained in almost all tedious labors, etc. Cases were related in which morphine had been used in quantities varying from one-half to one grain in from five to sixteen hours in the first stage of labor. Those were cases mostly in which instrumental delivery became necessary. The child in each instance had the appearance at birth of being exsanguinated, and death was believed to be due to conditions connected with the parturient process rather than to the effect of the morphine. In no single case had Dr. Caro noticed symptoms of narcosis in the child, after administering morphine or opium to the mother during parturition, and his belief was that the deleterious effects upon the child attributed to the influence of the drug were due to the retarded labor rather than to narcotism. A series of cases was related in which morphine was administered during the first stage of labor only, and for the purpose of relieving rigidity of the os, quieting annoying pains, etc. In all the cases the child was born in a prime condition. The morphine was given by the mouth, in doses of ½ or ½ grain, at intervals of varying length, and the entire quantity administered in each case was as follows:

Case I.—2 grains in 12 hours.

"II.—1 grain in 7 "

"III.—1 " 4 "

"IV.—3 grains in 11 "

"V.—3 " 14 "

"VI.—8 " 20 "

"VII.—1 grain in 18 "

"VIII.—5 grains in 20 "

Those were the more notable cases, and the last was worthy of special mention. In that instance the doctor purposely produced full narcosis in the mother, in order to see what the effect would be upon the child. The pulse was reduced to 60, the respiration to 16, and the pupils were markedly contracted. No ill results followed, although at the time he was afraid that he had produced fatal narcosis. Respiration in the child was quickly established, and the infant was healthy in every respect. On account of severe after-pains, it was necessary to continue the morphine in \(\frac{1}{2}\) and \(\frac{1}{4}\) grain doses for forty-eight hours. The child, from its birth, nursed from the mother, and without producing any symptoms whatever of narcosis.

Dr. Caro regarded the drug as a safe one to be used

either during pregnancy or during labor.

Dr. Church remarked that he had been in the habit of using morphine during labor, sometimes for the purpose of suspending labor, sometimes to support and sustain the mother; but he had not seen any result produced upon the child which looked like narcotism.

Dr. Joel Foster remarked that he had been accustomed to use morphine for the purpose of allaying annoying pains, and had given it in one large dose, thus hoping to give the woman a little rest. He had never

seen any ill-effects produced upon the child.

Dr. Post preferred to use a few large doses rather than small doses frequently repeated, if the pains were annoying. He had not seen anything which would lead him to believe that the child was suffering from narcotism in consequence of its administration to the mother.

Dr. Purdy had not hesitated to give opium or morphine during labor, and had never seen any deleterious effects produced upon the child.

Dr. O'Sullivan and Dr. J. C. Peters had been accustomed to use some preparation of opium during labor, in cases which seemed to require it, but had not noticed

any undesirable effect upon the child.

Dr. Munde favored the use of morphine hypodermically rather than by the mouth. He thought that the effect produced by 10 or 15 m of Magendie's solution of morphia, given hypodermically, was fully as severe upon the mother as to administer small doses by the mouth. It had been urged by some that morphine underwent a change in the stomach, was "digested" by the mother, hence could not narcotize the child: whereas, when administered hypodermically, it passed into the circulation almost at once, and the child might receive its narcotic influence. In the discussions which of late had been held in this city upon the question before the Section, he was of the opinion that those who took the view that the morphine did not act upon the child when given to the mother during labor were in the ascendency, both with reference to numbers and argument. Reference was made to the experiments made by Wigglesworth, of Liverpool, in which it was thought to be shown that morphine, under certain conditions, acted as a stimulant to the uterus during labor; hence the article most desired. According to his own experience, no deleterious effects had been produced upon the child.

Dr. Hanks thought there was one difficulty in deciding this question, from the fact that we never administered morphine to the mother without a necessity, and the necessity in the case might be sufficient cause for all the unpleasant conditions present in the child when born. He had never hesitated to use morphine in the first stage of labor, in such doses as seemed judicious, and had never seen, so far as he knew, any unpleasant effects produced upon the child. He did not use it hypodermically, unless the stomach was very ir-

ritable.

Dr. F. V. White and Dr. Sell corroborated the testi-

mony already given, by stating that they had not seen any ill-effects produced upon the child by the use of

opium during labor.

Dr. Kennedy remarked that he commonly employed Dover's powder, in doses of 12 or 15 grains, or Magendie's solution of morphia, in doses of 15 or 20 drops, for the purpose of allaying annoying pains during the first stage of labor, and giving the woman rest. He had not seen any evil effects produced upon either the mother or the child.

The Chairman remarked that the object for which he administered opium during the first stage of labor was to secure rest. It was both a sedative and stimulant to the uterus. He did not give it for the purpose of removing rigidity. Reference was made to a case of rheumatic neuralgia of the uterus in a pregnant woman, treated in 1842 by the use of hypodermic injections of

morphine, and without injury to the child.

Chloroform and opium were regarded as uterine stimulants. He did not partake of the view that the child could be sacrificed by the use of morphine during labor; it made no difference whether the membranes were ruptured or remained intact. He had frequently given morphine and chloroform as a uterine stimulant, instead of resorting to the forceps, when the head was well into the cavity of the pelvis. He preferred the watery extract of opium to morphine, because of the many unpleasant effects which were liable to follow the latter.

Dr. Caro's paper was referred to the Academy, and

the Section adjourned.

Gastrostomy.

At a meeting of the Academie de Medecine, in April, M. Lannelongue (of Bordeaux) read a communication on a case of gastrostomy. A man 59 years of age, without previous history, and of good health up to time of seizure, was suddenly attacked with difficulty of deglutition, which grew progressively worse to such an extent that at the time of his entrance into the hospital Saint Andre, six months after the onset of the trouble, a few spoonfuls of milk could scarcely be swallowed. There was discovered about the middle of the thoracic portion of the resophagus a very resistant and impassable obstacle

(stricture). Emaciation was extreme, but there was no cachectic tint; all the other organs were healthy.

There remained but one last resource, ultima ratio, to succor the patient from death by starvation, and that was gastrostomy. It was practiced with all the operative precautions pointed out by Prof. Verneuil, in his interesting communication to the Academie de Medecine, on the 31st of October, 1876. The consequences of the operation were very simple; there was neither pain nor inflammatory action. Alimentation was being regularly performed through the fistula, which, however, allowed a notable quantity of liquid to escape, when thoracic symptoms supervened, and carried off the patient on the 26th day from the operation. At the autopsy it was found that the primary lesion of the esophagus (epithelioma) had produced perforation of a bronchus from which the symptoms of asphyxia resulted and produced the fatal termination. But the stomach was solidly adherent to the abdominal wall, the gastric fistula was well formed, and the success of the operation was complete.

The author finished with the following conclusions: 1st. Gastrostomy is a rational operation, founded upon the history of gastric wounds and fistula, created experimentally in animals, or accidentally produced in man.

2d. It is at all times indicated when aphagia renders

death from inanition imminent.

3d. The operative procedures ought to be exactly conformed to the rules laid down by Prof. Verneuil, and of which one of the principal consists in only opening the stomach after having solidly fixed it to the abdominal wall by the very careful application of numerous points of suture, so as to avoid all immediate or subsequent effusion into the peritoneal cavity. Some modifications of detail might here be inserted; they would consist:

4th. In not passing lower, in the incision through the integuments, than the level of the lower border of the eighth left costal cartilage, in order to strike more directly upon the anterior wall of the stomach, which is always shrunken and drawn up toward the diaphragm, in consequence of the long abstinence, in patients suitable for gastrostomy.

5th. In opening the anterior wall in the vicinity of the lesser curvature, so that liquids secreted or injected, finding at a depressed point a sufficient space in which

to accumulate, may not flow out.

6th. In not applying upon the edges of the gastric orifice either hæmostatic, forceps or retaining threads for the bougie which is left in situ. Such means favor fissures and mortification, from which subsequent enlargement of the fistula results, and facilitates the escape of liquids.—Canada Jour. Med. Science.

Case of Anuria Lasting Twenty-five Days; Recovery.

Dr. WILLIAM WHITELAW, of Cupar, Fife, records (Lancet, Sept. 29, 1877) the following extraordinary, and, it is believed, unique case of long-continued anuria which

eventually recovered.

In May last, 1876, two out of six children, residing in a recently-built and well-constructed house in this neighborhood, took scarlating in a mild form, and made a good recovery. On returning from the seaside in the begining of September the remaining four were attacked; three of them recovered well; but the fourth, a healthy boy, aged eight years, was the subject of the above very strange sequela. He was attacked on September 11th, with marked throat symptoms and strawberry tongue; temperature never higher than 101°; rash almost imperceptible, and desquamation very slight. The existence of the other cases, however, left no doubt as to the diagnosis. He was quickly well, and, although not so strong as formerly, nothing particular was observed till December 3d, when his urine was observed to be scantier than usual; and on the 5th, on being called in, I found him apparently in perfect health-appetite better than usual, tongue clean, pulse 80, temperature 98.5°, and skin natural. There existed a little pain and tenderness on pressure over both lumbar regions; there was no swelling of face, hands, feet, or abdomen; and during the previous twenty-four hours he had past ten ounces of urine, clear in color, sp. gr. 1018, and free from albumen. He was ordered a hot bath; poultices over the kidneys; to drink as much fluid as possible; and a mixture of acetate of potash, squill, digitalis, and broom. On the 6th I found he had passed only two ounces of urine, but he had perspired very freely after a bath.

He was eating and sleeping well. On December 7th there was voided only one drachm of urine; and from this date till the 20th not one single drop, and yet, with the exception of slight headaches, his general health continued excellent. During this time three or four liquid stools daily were procured by the exhibition of compound jalap powder, and diaphoresis was maintained by baths and poultices. On December 19th Dr. Lumgair, of Largo, saw him in consultation, and could scarcely credit that suppression had gone on so long without the supervention of dropsy or any symptom of uræmic poisoning. He suggested vesication over the kidneys, and in twenty hours after the application of the blister two ounces of urine, free from albumen, had been passed; and I hoped that the kidneys were now roused from their state of torpor (for it seemed to be that, more than actual nephritis). No more urine was, however, secreted; and on the 27th the blister was repeated, but this time with no successful result. The baths, poultices, and jalap were now discontinued, in the belief that the urea was being removed by these means, and that, by ceasing diaphoresis and purgation, the kidneys might be forced to resume work. The diuretics were, however, continued. This change of treatment made no apparent difference. The bowels acted twice daily on their own accord, and the boy continued in excellent health. On the 31st of December there appeared very slight ædema of the feet and ankles; and on the morning of January 2d one drachm of urine was passed. On the same day, with the aid of Dr. Fraser, superintendent of the Fife and Kinross Asylum, electricity was applied to the spine and through the kidneys, and a small catheter was passed into the bladder, in the hope of exciting reflex action. On the 3d and 4th of January about the same quantity was passed daily; and on the 5th a whole pint was voided in small quantities at eight different times. Since then the kidnevs have acted well, and the boy has (January 12th) quite recovered.

The following points seem of interest:—1. Twelve weeks elapsed from the date of taking scarlatina (which was of a very mild nature) till the suppression took place.

2. With the exception of two ounces passed on the thirteenth day, there was complete anuria for twenty-five days.

3. Except slight headaches, and latterly slight

cedema, there were no uræmic or dropsical symptoms throughout. 4. There was no albuminuria and no febrile action. The kidneys seem to have been in a state of torpor, and their work must have been carried on by the bowels, skin, and, to some extent, by the lungs. 5. It is hard to say what share the treatment had in the final happy result. Vesication at first seemed beneficial, but a second trial had no such effect. Then one drachm of urine was passed before the application of the battery, and therefore the credit can not be entirely due to it. Probably, ceasing diaphoretics and purgatives, and thus throwing the entire duty of excreting the urea on the kidneys, was the best line of treatment that could be adopted, although at first sight a somewhat risky proceeding.

I may add that the boy was closely watched, night and day, by his parents and the servants, and was offered rewards to induce him to micturate; so that the idea of deception can not be entertained. Drs. Lumgair and Frazer, although at first skeptical, are as much convinced of the genuineness of the case as I am myself.

Michigan State Board of Health.

THE regular quarterly meeting of this Board was held at Lansing, January 8, 1878. The members present were Drs. Kedzie, Lyster and Baker, Hon. Leroy Parker and Rev. D. C. Jacokes.

Dr. Kedzie (President of the Board and Chairman of the Committee on Special Sources of Danger to Life and Health) gave a brief statement of some interesting experiments which he had recently made in relation to the permeability of walls and clothing, and the relation of these to the healthful conditions of houses and clothing.

Leroy Parker read a report on a proposed amendment to a law requiring the transmission by the county clerks to the Secretary of State of the names and post-office addresses of coroners, as well as those of other county officers now reported. The proposed amendment will enable the State Department and the Secretary of the State Board of Health to communicate with these officers, and to learn from them the number of sud-

den and violent deaths, and the causes of same, with a view to remove causes when possible. Mr. Parker stated that he had been in correspondence with the authorities of Massachusetts in regard to the recently amended laws of that State relative to coroners and coroner's juries, which seem to be much better than the laws in this State. He was requested to continue his investigations and report at length. He also read a report pointing out the fact that section 6852 of the compiled laws of 1871 makes it the duty of supervisors to prosecute householders and physicians for not giving notice of cases of diseases which endanger the public health. Sections 1734-5 point out the manner in which such notices shall be given. Mr. Parker and Dr. Baker were appointed a committee to draft a circular to supervisors of townships, pointing out their duties under this particular law. Mr. Parker was requested to draft an amendment to the present law which would require the health officers of cities and villages to prosecute, in the same manner as do supervisors in townships, for any neglect to give notice of contagious diseases.

The Secretary reported that during the past quarter work had been done: On planning and mailing a circular to correspondents giving details of plan for making weekly reports of diseases; on distribution of postal blanks for reports of diseases, and receiving and compiling the same when returned; on planning, folding and directing the circulars and blanks for the annual reports of 1,224 clerks of local boards of health and 1,102 health officers throughout the State; on issuing blanks, stamped envelopes, etc., to meteorological observers for their monthly reports; the names and addresses of 800 health officers of townships, 28 health officers of cities, and 67 health officers of villages have been received; six or eight documents have been sent to each health officer so reported. [Most of these health officers have been appointed because of the past action of this Board. Many of them are physicians. Work had also been done on the forthcoming annual report of the Board for the year 1877; and by the Secretary, on the vital statistics for different years, and on the registration report of births, marriages and deaths, just printed. Books and instruments to the amount of

\$375 had been purchased and placed in the library. The usual correspondence of the office had also been

kept up.

Drs. Kedzie and Baker were appointed a committee to revise the rules and regulations recommended by the State Board for adoption by local boards of health, with

a view to the publication of a new edition.

On motion of Rev. Dr. Jacokes, Dr. Kedzie was requested to prepare a summary of his various papers on ventilation of buildings, the object being to have it published in pamphlet form for general distribution throughout the State.

A communication was received from Dr. Milton Chase, of Otsego, Allegan County, stating facts in regard to fattening hogs on refuse from slaughter-houses.

Dr. Baker presented a bill drawn by Dr. Folsom, of the Massachusetts State Board of Health, to prevent the pollution of streams by sewers, slaughter-houses, manufactories, etc. This bill was referred to Dr. Lyster (Committee on Drainage), who was requested to report thereon.

The Secretary stated that diphtheria had been more prevalent than usual in this and other States, and suggested that the Board issue a circular on the subject. Dr. Hitchcock was requested to prepare such a circular. The causes of diphtheria were thoroughly discussed, and the opinion seemed to prevail that sewer gas, dampness, and mold had much to do in causing it, although it is a contagious disease.

Dr. Kedzie made a brief report, giving an account of experiments and tests for detection of lead in tin utensils in common use, having examined quite a number of specimens. He found about three-fourths of all the specimens examined contained lead in considerable amount. These examinations were brought about by a communication from Dr. Edward Dorsch, of Monroe, Michigan, which had been referred to Dr. Kedzie as Committee on Poisons, etc. Dr. Dorsch detailed some cases of lead poisoning from the use of tin utensils. The test which Dr. Kedzie gave for this adulteration is quite simple. Place a drop of nitric acid on the tin to be tested, and evaporate to dryness; then add a drop of iodide of potassium. If lead is present there will be a yellow coloration; if it is not present, the spot will re-

main white. Dr. Kedzie will examine the subject

further, and report at a future meeting.

A communication was received from the local board of health in the township of Minden, Sanilac County, stating their action for preventing the spread of glanders by killing and burying a horse affected with that disease, and that an action for damages had been commenced by the owner of the horse against the individual members of the Board.

An interesting communication was read from Wm. F. Jenison, of Eagle, Clinton County, showing the advantage to farmers of securing good water and thorough

drainage.

A communication was also received from A. Kehl, of Pulaski, Jackson County, asking a multitude of questions relative to drainage where low land lies in adjoining townships. Both of these communications were referred to Dr. Lyster.

Adjourned on Tuesday evening until April 9.

An Improved Ophthalmoscope.

BY D. E. DUDLEY, M. D.

Notwithstanding the ingenious designs—practical and commodious forms—which characterize many of the more modern opthalmoscopes, particularly those so nicely devised and arranged both by Dr. Loring and Dr. Knapp, of this city, I take pleasure in presenting to the profession a modified one, which, while it obviates some objections, will, I am persuaded, be found to embody all the advantages possessed by those so justly celebrated of the above-named authors.

While respecting the optical and general features of the Loring and Knapp instruments, the essential of what I may call my modification consists in arranging two equal discs containing the dioptric trains—positive and negative—in a form which, in my opinion, is more

compact and convenient for manipulation.

This result I have obtained by collocating both discs upon an eccentric pivot, allowing thereby an overshot or projecting margin of each—the one to the right, the other to the left—from the lateral borders of the inferior third of the instrument. Upon this they are rotated and managed with all the ease and facility which

distinguish those of the single disc.

Of the advantages accruing from this arrangement I need scarcely speak. The discerning ophthalmologist will at once perceive them. By it he can adopt the form and construction of any mirror his fancy or experience may lead him to prefer. The lenses of the dioptric media, while retaining that medium aperture compatible with efficiency, may, through their plus and minus combinations, amount to a series more than sufficient for every exigency, and the instrument still kept in due bounds with regard to size; in fact, considering the number of combinations, it is the smallest of ophthalmoscopes.

The focal index can, of course, be arranged either by the metrical or English enumeration, and made to read positives upon one side and negatives on the reverse, or both placed upon the back of the instrument, according

to fancy.

This ophthalmoscope I have had made by Miller Brothers, opticians, who, in executing my design, have exhibited much skill and elaborateness of workmanship.

New York, November 20, 1877.

Removal of the Thyroid Gland.

WE learn from the Buffalo Medical and Surgical Journal that Dr. Julius F. Miner, of Buffalo, on the 25th of last October, removed the thyroid gland, in consequence of goitre, in the case of a German, aged forty-three. The swelling began when the patient was about nineteen. Previous to the removal, every sort of medicine had been employed by various physicians which was supposed to have beneficial effect upon glandular enlargements.

During the last three years the patient suffered inconvenience. For over a year past he would wake at night with a feeling of suffocation. It became so distressing that, as he expressed it, "he often wished to die at once and be done with it, rather than live to die

every night."

The patient having been brought under the influence of ether, an incision three inches in length was made diagonally across the tumor, which was then seized with strong tenaculum forceps and raised from its bed. As soon as this was done the patient, who had before struggled for breath, began to breathe easier. The tumor was now enucleated, the vessels being tied as approached, some of them before division. After the first incision the knife was discarded, the dissection of the attachments being accomplished by the handle of a scalpel. There was considerable hemorrhage, which was controlled by ligature without the use of the cautery. The arterial supply was from the usual branches, but they were only to be known from their situation, and not from their size or importance. No artery was found of the size of the superior thyroid, as supplying the gland in health. The firmest attachment was at the base, being the entrance of the inferior arteries, which were ligated and divided. The wound was closed with superficial sutures and water dressings applied. He rallied immediately from the operation, had no trouble with it afterward, and he suffered so little that the necessity of keeping his head still could not be impressed upon him. In due course of time the ligatures came away and the wound healed; in two weeks he was at work, feeling better and able to do more than he had for three years. There was an entire absence of any bad symptoms.

The tumor removed consisted of a hard mass having the appearances of cartilage, in which were found small calcarious deposits, with two or three cysts in the center of the body. It was irregularly quadrilateral in form, the corners being rounded; the anterior surface was convex, while the posterior was slightly concave, having half an inch to the right of the center of a perpendicular groove, half an inch deep and three-quarters of an inch wide, marked tranversely by the rings of the trachea. Its weight was 3vj, 3iv, gr xv. It was nine (9) inches in circumference, three and three-quarters (33) inches in breadth, four (4) inches in length, and two and one half $(2\frac{1}{2})$ inches in thickness. The union of the two lobes could not be made out, for the neck had so enlarged as to entirely fill up the interval between them. From its position, size, appearance and

the relation of other structures to it, there can be no doubt but that there was in this case an enlargement and solidification of the thyroid gland of slow growth. The pressure upon the trachea was so great that it flattened it, and misled one physician who made a laryngo-scopical examination, and induced him to state that the impediment to respiration was due not to the pressure from the enlarged gland, but to a small tumor which was growing upon the interior of the trachea, but that he had no instruments by which it could be removed.

The points of greatest interest are the facility with which the gland was removed, and the comparatively slight hemorrhage which was so easily controlled. This was owing to the greatly lessened vascular supply, due, no doubt, to the nature of the degeneration; and the case is confirmatory of the statement made in the article previously quoted, "that a diseased gland may in some cases be more safely extirpated than a healthy

one."

SIGNS BY WHICH PHTHISIS IS RECOGNIZED IN ITS EARLIEST STAGES WITHOUT THE AID OF PHYSICAL EXAMINATION OF THE CHEST.

(The Medical Record, September 1, 1877.)

1. Retraction of the skin over the cheeks.

2. Cerulean hue of the sclerotic, due to anæmia of the conjunctiva.

In bronchitis and emphysema there is conjunctival

anemia, and also in the later stages of phthisis.

3. Atrophy of the lips, of the ears, and a thin pinched appearance of the nose. Wherever the skin closely covers cartilages, as in the ears and nose, a showing through, as it were, of the cartilaginous frame-work is one of the earliest signs of loss of flesh.

4. Pallor of the cheeks and face as compared with

each other and with the malar surfaces.

5. Dilatation of the nostril upon the affected side. This is the case in all pulmonary affections, but espe-

cially in the earliest stages of phthisis.

6. The respiration is invariably accelerated, and the disturbance affects expiration as well as inspiration. In certain nervous disturbances the respiration is accelerated, but it is the inspiration only which is at fault.

7. Sinking of the clavicle more upon the affected side than upon the opposite, and giving the appearance of

having a very long neck.

8. Great hyperæmia of the pillar of the fauces, present long before the pulmonary disease manifests itself, and continuing until pus is expectorated. When purulent expectoration is established, descomposed pus irritates the throat, and then the other parts usually become

hyperæmic.

9. Intense congestion of the throat, early hoarseness, and vomiting are unfavorable symptoms, and indicate enlargement of the bronchial glands. This vomiting is caused by pressure upon the pneumogastric by the enlarged glands. A large proportion of phthisis cases will tell of having had sore throat for a number of years previous to the development of any chest symptoms.

MICROSCOPY.

Numeration of Blood Corpuscles.

Dr. W. R. Gowers, in the Lancet of December 1, says that the richness or poverty of the blood in corpuscles can only be ascertained by directly counting the number of corpuscles in a given volume of blood. It is only by this means that variations in their number—an important element in all conditions of anemia—can be with accuracy ascertained or stated, and it is thus that the relative numbers of the red and white corpuscles can be best determined. The method has been largely employed in France and Germany, but is almost unknown in clinical work in England.

The principle of the proceeding consists in making a definite dilution of a measured quantity of the blood, and counting the number of the corpuscles contained in a certain volume of that dilution. Several modifications of the process have been made. An inconvenience, however, has been that the instruments can be employed only with one microscope, and with an eye-

piece made specially for the work.

In order to remedy the inconveniences, Dr. Gowers constructed an instrument which can be used with any

microscope, and by which greater accuracy can be secured in the operation. In it tenth-of-a-millimeter squares are ruled on the glass slide at the bottom of the cell. When the corpuscles have subsided to the bottom of the cell, they are seen lying in the divisions, and the number in each can be counted with perfect facility. In the French instrument, a little fluid has to be placed in the glass cell to secure the covering-glass. This I have found objectionable, because the amount of fluid influences the closeness with which the covering-glass rests on the cell, and the consequent depth of the cell. To obviate this source of error, the slide has been placed on a metal slip to which two springs are attached; these rest on the edges of the covering-glass, and keep it in position with a pressure which is always uniform. The other parts of the instrument, for measuring and mixing the blood and the diluting fluid, are on the same plan as in the instrument of Hayem and Nachet. But by employing a dilution (1 in 200) which is somewhat different from that which they employ (1 in 251), the process of ascertaining, and also of stating the corpuscular richness of the blood, is much simplified.

The hæmacytometer consists of—(1) A small pipette, holding exactly 995 cubic millimeters. (2) A fine capillary tube, holding 5 cubic millimeters. (3) A small glass jar, in which the dilution is made. (4) The cell, above mentioned, exactly one-fifth of a millimeter deep, the floor of which is ruled in tenth-of-a-millimeter squares. Various diluting solutions have been recommended, in order to change as little as possible the aspect of the corpuscles. It is not well, however, to endeavor to observe the characters of the corpuscles during the numeration. Whatever solution is employed, the corpuscles are, more or less, changed by it. One which answers very well is a solution of sulphate of

soda of a specific gravity of 1025.

The mode of proceeding is extremely simple. A pipetteful of the solution is placed in the mixing vessel. Five cubic millimeters of blood are then drawn into the capillary tube from a drop in the finger, and then blown out into the solution. The two are well mixed by a glass rod; a drop of the dilution is placed in the center of the cell, the covering-glass applied and secured by the springs, and the slide placed on the stage of the

microscope. The lens is then focused to the squares. In a few minutes the corpuscles have sunk on to the squares. The number in ten squares is then counted, and this multiplied by 10,000, gives the number in a cubic millimeter of blood. The average of healthy blood was decided by Vierordt and Welcker to be 5,000,000 per cubic millimeter, and later results agree with this sufficiently nearly to justify the adoption of this number as the standard, it being remembered that in a healthy adult man the number may be a little higher, in a woman a little lower.

In the proceeding one or two precautions are necessary to insure accuracy. The blood, as Hayem suggests, should be obtained by a puncture with the point of a lancet, sufficient to permit the escape of a drop without much pressure. If the finger is much squeezed or pressed, the relative amount of serum and corpuscles is affected. It is somewhat difficult to get the exact quantity of blood in the capillary tube, because in removing the blood from the point, a little is easily drawn out of the tube. It is, therefore, best to draw rather more than the required quantity into the tube, then to remove the blood from the point with a soft cloth, and keep the cloth in contact with the point while the extra blood is blown out of the tube. A little of the diluting fluid should be drawn into the tube after the blood is ejected, to insure the removal of all the corpuscles. The drop placed in the cell should not come in contact with the sides of the cell. It must, of course, be in contact with the cover-glass. The corpuscles should be counted in or near the center of the drop. In distinguishing the red from the white corpuscles, it must be remembered that a weak diluting solution causes many corpuscles to swell up to twice the size of the others, and care is needed to distinguish these from the white cells. A quarter-inch objective is the most convenient to employ. The whole process, from beginning to end, does not occupy more than a quarter of an hour.

THE DEVELOPMENT OF THE RED CORPUSCLES.—M. G. Hayem, in communicating to the Academie des Sciences, by M. Vulpian, in regard to the development of the red globules in oviparous vertebrata—birds, reptiles, batrachians and fishes—states that the blood of these creatures con-

stantly contain cells, which are destitute of coloring matter, and yet differ essentially from the ordinary white corpuscles. These cells, on development, become perfect red corpuscles, and, hence, Hayem proposes to call them "hematoblasts." He has found them in all oviparous vertebrata examined (various birds, the tortoise, lizard, adder, frog, toad, triton, axolotl, and several fishes). They are also found in the blood of the tadpole, in which the characters they present are the same as in the adult animal. During their successive transformations, the hematoblasts pass through two phases. They are at first very pale and delicate, so that it is with difficulty that they can be distinguished from white corpuscles. They differ from the latter in the transparency and feeble refracting power of their protoplasm, and by their viscosity, by which they adhere one to another, and sometimes form a mass of considerable size. Their form is, moreover, somewhat angular or elongated, especially in birds, and they have a solitary nucleus, which is clearer than the body of the corpuscle. characters of the nucleus vary in different animals, but always resemble those of the nuclei of the red corpuscles. with this difference, that the latter are a little smaller, and often less elongated. In the second phase of development the corpuscles gradually assume the appearance of small discs, and lose their viscosity. The coloring matter appears usually before the development of the cell is completed, and then some colored elements may be seen in the blood, having the form of hematoblasts. All the reagents act on the hematoblasts just as they do on the red corpuscles, and produce no effects such as are manifested by the leucocytes. When dried rapidly, many small cells, which were colorless in the wet state, appear to be colored, as if they already contained a small quantity of hæmoglobin. A comparison of the blood of many animals shows that these hematoblasts are in no case less numerous than the leucocytes, and that often, on the contrary, they are twice as numerous. Their proportion to the colored corpuscles is, in the bird, 1 to 100, in the snake 1 to 40, in the tortoise 1 to 50, and in frogs 1 to 60. Hayem concludes that the white corpuscles do not form the red globules, and that while in the higher animals the newlyformed red corpuscles are colored, whatever their origin,

in the ovipara the embryonal corpuscles are at first free from hæmoglobin. An important problem is the relation these so-called hematoblasts bear to the leucocytes: whether they are really distinct, or merely a stage of transformation of the latter. This point, in spite of M. Hayem's opinion, must be considered as still doubtful.

What is a Diatom?—President Ashburner, of the S. F. Mic. Soc., recently read a translation, by him, of an essay by M. Julien Deby, of the Belgian Mic. Soc., on this subject, which was illustrated, by drawings on the black-

board, by Col. Kivnis.

"The little microscopic organisms, of which we propose to say a few words, are distinguished from unicellular algæ properly so-called, as infusoria are distinguished from rhizopods, by certain well-marked characteristics. They form one of the numerous links which exist between what we are still disposed to call empiricly the animal and vegetable kingdoms; great divisions which are only separated from one another by the traditions we have inherited from the first fathers of science, when the study of anatomy, histology, physiology and morphology did not exist, and when philosophical ideas of life were only presented as a nebulous vail, the corners of which have only very recently been raised by the aid of the microscope.

"The only connection between the surrounding and nourishing liquid in which the diatoms live, exists in the circumference, so to speak, of the connectives (between the valves of the frustule); also, in certain pores, somewhat problematical, along the lines of the connectives with the corresponding valves, and always in the form of lineal joinings, which are only visible by means of our most powerful modern objectives. Neither pores or openings are probably ever found in the frustules of diatoms, notwithstanding the assertions of certain microscopists. Neither does solid matter ever penetrate from the exterior into the interior of living diatoms;

they drink, but they do not eat.

"The curious active movements of certain diatoms always occur in an obvious manner (the principle of which is, however, obscure), by a vital action along the joinings mentioned. This is so true that if, owing to any cause, a frustule is stopped in its course by an in-

surmountable object, the translating force is immediately seen to be converted into another, which causes all the small bodies about it, which are floating in the water, to move backward and forward with great ra-

pidity.

"We believe that diatoms possess other means of reproduction beside that of conjugation, but the life-history of these minute beings is too imperfect for us to venture any hypothesis in this direction. The modern appearance of species where none existed before; their periodical succession, year after year, at definite seasons, without being able to find any in the interval in the same locality, give rise to the possibility of a mode of generation, which is as yet only suspected, by means of germs—by micro—or macro—zoospores, and perhaps, in the first instance, with the formation of zygozoospores, as occurs in the case of living algae of the lower orders and situated under the same conditions as the diatoms.

"We foreshadow here a most interesting field of study, and one which is almost new to the naturalists provided with a good microscope and possessing the time and patience necessary for this kind of study; and we think we can say with confidence, that whoever will follow with care the entire life-history of a single diatom, no matter how common the species, will render a greater service to science than by describing and drawing hundreds of the siliceous frustules from the four quarters of the globe."

PROCEEDINGS OF DUNKIRK MICROSCOPICAL SOCIETY.—Regular meeting held December 14, 1877, Geo. E. Blackham, M. D., President, in the chair. A paper by L. M. Willis, M. D., of Boston, Massachusetts, descriptive of a new and cheap form of heliostat, constructed from a marine-clock, was read, and a photograph of the instrument was exhibited. The instrument appears to have the merits of simplicity and cheapness, and, as stated by Dr. Willis, to be efficient for all ordinary purposes. It can be made, with the aid of any good watchmaker, at a cost of from \$25.00 to \$30.00.

The President described and presented for examination a new first-class microscope, constructed for him by R. B. Tolles, of Boston, Massachusetts, which combines several new and valuable features, and great strength, solidity and elegance, and perfection of workmanship. Among the novel points are a simple device for taking the focal length and working distance of objectives, and a new method of obtaining oblique illumination and of reading off the degree of obliquity. The stage is circular, and rotates in the optical axis of the body so truly, that an entire revolution may be made without sensibly decentering the object, even when so high a power as two thousand diameters is used.

Additions to library and cabinet—Journal de Micrographie, September and October, by the editor; Cincinnati Medical News, October and November, by subscription; the Science Observer, October and November, by the editor; a package of diatomaceous earth, unknown.

C. P. Alling, M. D., Secretary.

" CHEAP MICROSCOPY.—We had designed, in this number, to continue our description of Student's Microscopes of different makes, but our space will not permit. We will, however, say a word respecting "The Household and Dissecting Microscope," which we have been advertising. To young physicians, just setting up, whose means are necessarily limited, and some others, too, we would cordially recommend this very cheap but very efficient little instrument. Its capabilities are far beyond what many would suppose from its price. no such humbug as the Craig instrument. Having a range of power of from five to thirty diameters, it gives sufficient amplication in a surprisingly large number of instances. In most cases urinary deposits can be made out by it. The physician who does not number among his instruments of diagnosis a microscope of at least the capabilities of this one, is certainly very much lacking in such instruments as he ought to possess for the good of his patients. Price \$2.75. To be had by addressing MEDICAL NEWS, Cincinnati.

A NEW WORK ON HISTOLOGY.—Dr. G. Pelletan, editor of the Journal De Micrographic, in a late number of that journal, states that M. M. G. Pouchet and F. Tourneux have recently published a second edition of their "Compendium of Human Physiology." He gives quite a lengthy outline of the work, and concludes by pronouncing it a useful book, which will fill a want.

MINUTE STRUCTURAL RELATIONS OF THE RED BLOOD COR-Puscles.—Prof. Bettcher, of Dorpat, communicates the fact that a nucleus can be demonstrated in the red blood cells of mammals by treating them with a solution of corrosive sublimate in alcohol. Treated in this way the blood corpuscles can be arranged in several groups. First—Those which appear homogeneous and shining. Second—Those with a homogeneous shining, cortical layer, and a granular mass in the interior, which last is more darkly stained by carmine and eosine. These are, by far, the most numerous. Third—Blood corpuscles, in which three parts can be distinguished; (a) a bright homogeneous cortical layer; (b) the granular protoplasm; (c) a clear nucleus inclosed in the latter and containing a bright nucleolus. In the case of a man who died from drinking corrosive sublimate, the corpuscles presented the character recounted above.

An Improvement.—Geo. E. Blackham, M. D., President of the Dunkirk Microscopical Society, has arranged a scale on the body, and a vernier on the limb of his microscope, which serves to register the exact amount of change in the position of the body. The scale reads to 1.100th and the vernier to 1.1000th of an inch. The real working distance is exactly ascertained by focusing accurately, taking a reading, then using coarse adjustment to run down until front of objective touches the slide or cover, and taking another reading. The difference between the two reading is, of course, the working distance. When there is a cover, its thickness must be added to the difference to get the true amount of conjugate focus.

FAIRMOUNT MICROSCOPICAL SOCIETY, PHILADELPHIA.—The regular monthly meeting of the Fairmount Microscopical Society, of Philadelphia, was held Thursday, December 20. The use and value of eye-piece and stage-micrometers was the main topic of the evening, and was very fully discussed. The use of the two micrometers was shown by means of mounted specimens of diatoms and spores of fungi. After the examination of various objects, and election of new members, the Society adjourned.

GLEANINGS.

OBSTETRICS AND GYNÆCOLOGY.—The value of ergot in restraining hemorrhage has been much questioned, yet the general opinion, as expressed during the year, would appear to be that, if a reliable preparation of the fluid extract, or a freshly prepared infusion be employed, the drug is still worthy of our confidence. Gordon, of Hannibal, Missouri, has found the tincture of hydrastis canadensis, in twenty to thirty minim doses, very useful in such cases. Dr. Runge has this year stated that he has found intra-uterine injections of hot water (117°-124° Fahr.) to succeed where ergot, ice. and external manipulation had failed. He also cites Windelband, Jakoch and Landau's experience in its favor, but he does not appear to have been aware that it has been long practiced in America by Fordyce Barker, Emmet and others. The majority of the records of the year are, perhaps, in favor of the tincture of iodine or the perchloride of iron. In the Practitioner for March, Dr. Griffiths reports favorably upon the use of ether spray. Several cases of rupture of the uterus have been recorded with unusually favorable results. Hart, of Amsterdam, relates one case in which the fœtus was delivered by gastrotomy, and the life of the mother saved. Mr. Richmond Leigh, of the Liverpool Lying-in-Hospital, records the occurrence of a case of rupture without symptoms; labor was terminated naturally, and the placenta came away easily. Collapse was absent. She lived six days, and apparently died from hemorrhage. The rent was found at the junction of the lower $\frac{1}{3}$ with the upper $\frac{2}{3}$ of the uterus. Dr. Rose, of West Winfield, N. Y., reports the case of an Irish woman who has undergone four successive rup. tures of uterus, and is still living. Gastrotomy in obstetric practice has not been without its successes during the year. Dr. Buckell, of Winchester, records a case where the life of the fœtus was saved by Cæsarian section performed between twenty and thirty minutes after the death of the mother. Dr. Kæberle, of Nancy, performed gastrotomy for an irreducible retroversion of uterus producing intestinal obstruction; the uterus was restored to position, one of its ligaments fastened in

the wound, and recovery ensued. As mentioned in the surgical section, Mr. Lawson performed gastrotomy in a case of extra uterine fœtation, but, owing to the existence of tuberculosis, the patient did not recover. From the discussion at the American Gynecological Society this year it appears that dilation of the cervix must be credited with a real potency in the arrest of uterine hemorrhage, whether the explanation that it relieves congestion above the internal os by removing the constriction at that point be received or not. The subject of placenta prævia and its treatment by the induction of premature labor has been fully discussed during the year. Dr. Thomas, of New York, reported an additional successful case in support of this, his mode of treatment, making in all, in his experience, eleven cases with two deaths (neither directly due to the placenta prævia). These statistics make the future of these cases as bright and promising as the past has been gloomy and foreboding. That the condition of pregnancy is not a necessary bar to the performance of major operations the statistics this year brought forward at a meeting of the Obstetrical Society of London. by Mr. Spencer Wells, amply testify. Out of nine cases of ovariotomy, eight mothers recovered, seven children were born naturally, one feetus was removed at time of operation, and one was expelled twenty-five days after. The induction of premature labor in these cases can not compare with this result. Dr. Fritz Benicke also reports five cases of successful removal of malignant disease of the cervix uteri during pregnancy.

REVACCINATION.—The following quotations are from a

letter of Dr. Henry Martin:

"A person properly vaccinated in infancy, and revaccinated with perfect virus in adult life (after fifteen years of age) with vaccinal effect (i. e., more or less perfect approach to a typical primary vaccine vesicle), is absolutely and perfectly protected from the small-pox or varioloid in any form or degree for the rest of life, excluding the fourteen days after vaccination was done."

* * * * *

"The infinite rarity of occurrence of cases of varioloid or small-pox, after such vaccination or revaccination, does not at all invalidate or in any way affect the general rule of complete protection, by a successful revaccination in adult life. The protection afforded by a perfect vaccination in infancy, with virus not too far removed from the cow, is absolute till the age of ten—nearly so till that of fifteen. During the wonderful change from childhood to adult life, this protection is more or less rapidly and completely impaired. It is not probable, theoretically, that the effect of good primary vaccination, even in infancy, is ever entirely lost, but in many, practically, it is so."

"Individuals successfully vaccinated for the first time at ten years are generally protected for life; those first vaccinated at five, or even four years of age, often are so. After the first dentition is passed, every additional month of age adds many months to the permanence of

his protection."

"I have more than once seen perfectly defined variola (unmodified small-pox) within a few months after the operation of vaccination was nominally done, but not after true vaccination. All this class of cases are explained:

"1. By patients having already in their systems the

germ of small-pox.

"2. By the use of virus so utterly enfeebled by long and careless human transmission as to be very imper-

fectly protective.

"3. By the use of something (pus, serum, blood, decomposed animal matter, etc.), as vaccine virus which is not vaccine virus at all, which often, however, produces a sore arm, and sometimes even an imperfect resemblance to true vaccinia."

"If perfect vaccination is done on a person within three days after exposure to small-pox, the latter disease is very much modified—often entirely prevented. If from four to six days have elapsed, it is very doubtful whether the vaccination exercises any modifying effect. It certainly does not prevent the development of small-pox, and if the latter disease has the start by more than six days, vaccination has no effect, either modifying or preventive."

MORTALITY OF PHYSICIANS DURING THE YEAR 1877.— The year's obituary list contains among many others less known such names as these: Albrecht Erlenmeyer, the German alienist; John Gairdner, of Edinburgh (æt. 87); Sir Wm. Fergusson (æt. 68), Dr. Tettes (æt. 80), Prof. Henri Ferdinand Dolbeau, the eminent Paris surgeon, author of the use of alcohol in surgical dressings and of the "lithotrite perineale;" Alexander Eugene McKay, the statistician of the Royal Navy; Dr. Basham, of the Westminster Hospital; Daniel Donovan, of Cork, of Irish famine fame; Peter Brotherston, of Alloa; Dr. Robert Lee, an Edinburgh graduate of 1814; Guiseppe de Notaris, the eminent Italian botanist (æt. 72); John Adams (72), Peter Marshall (68), Dr. Wm. Morris (æt. 85), James Baker (æt. 26), the promising medical orator of the future; Wm. Coulson (75), Ed. Coupland (83), C. W. M. S. Graham, of Dalkeith (80); Henry Wilson, the celebrated Dublin oculist (40); John Cronvn (51), John Richard Carmichael, who fell a victim to typhus at Chefoo, while attending the Chinese poor; Henri Conneau (æt. 74), body physician to Napoleon III.; Evasio Adami, of Turin, first body physician to Victor Emmanuel; Volkmann, Isambert, Ricord, Cavontou, Bourier, Charles Mayo, Prof. C. Von-Heine, the surgeon of Prague; Prof. A. R. Crosby, of New York; S. Bathurst Woodman, Wm. E. H. Post. Nathan R. Smith, of Baltimore, aged 80; Prof. Chas. A. Budd, of New York; Gurdon Buck, Herman Althof, Prof. Joseph Carson, of Philadelphia; Joseph Freer, of Chicago; Paul F. Eve, of Nashville; Wunderlich, of Leipzig; Dr. Henry Lawson, editor of the monthly Microscopical Journal of G. B.; and Samuel Warren, author of a "Diary of a Late Physician," and "Ten Thousand a Year;" more immediately connected with ourselves, Dr. Hamilton, of Dundas, and Dr. Dewar, of Port Hope. Several French physicians died during the year, from diphtheria, contracted in attendance upon patients during the Paris epidemic, and Dr. Cline, of the Montreal General Hospital, perished from a similar Of these, some had overpassed the limit of man's threescore years and ten, others had not yet reached it; some cut off in the heyday of life and usefulness, others just entering on their career, but all died in harness, verifying Vaughan's description, as far as the physician is concerned, at all events, "Man is the shuttle to whose winding quest and passage through these looms. God ordered motion but ordained no rest:"

but if, as we believe, as the sequel of "life well spent, and work well done," "there remaineth a rest," then, on behalf of those whose names are set down above, it will be superfluous to add, "Requiescat in pace!"—Canada Journal of Medical Sciences.

Cases of Intestinal Obstruction with Remarks on DIAGNOSIS AND TREATMENT.—This paper was based upon an analysis of the cases reported in the records of Middlesex Hospital, and in the transactions of the Patholog. ical Society, during a period of over thirty years. Alluding to the tendency of fæcal accumulations to set up internal inflammation, and even ulceration, they showed that the cæcum is the point of greatest danger, owing to its peculiar position, receiving the influx from the ileum and the reflux from the strictured gut. this account, therefore, they strongly advise the performance of right colotomy as soon as the diagnosis of stricture is established, thus affording immediate relief to the over-distended cæcum. In cases where the disease is situated above the cæcal valve, they recommend enterotomy as a safer, and a far more effectual means of affording relief to the distended bowel than acupuncture. In reviewing our means of diagnosticating the seat of stricture, they conclude that when it is above the reach of physical examination, it is necessary to study our statistics of such cases. As, however, the stricture is most frequently in the large intestine, an error as to the precise seat would not affect the operation they recommend.—Sidney Coupland, M. D., and Henry Morris, M. A., M. B., in British Medical Journal, September 1, 1877.

BOOK NOTICES.

Modern Medical Therapeutics. A Compendium of Recent Formulas and Specific Therapeutical Directions. From the Practice of Eminent Contemporary Physicians—American and Foreign. By Geo. H. Napheys, A. M., M. D., etc. Fifth Edition, enlarged and revised. 8vo, pp. 598. Philadelphia: D. G. Brinton, 115 South Seventh Street. 1878. Price \$5.

As is known, the author of this work is now deceased, and the editor has prepared the present edition. The fourth edition was exhausted in less than a year. Certainly, this testifies in the strongest terms in how great value the work is held by practitioners of medicine.

The editor has separated the work into two independent volumes, thus affording an opportunity to treat each subject in a more complete manner, and to introduce a number of important topics not previously

discussed.

In previous notices, we have described pretty well the scope of the work. It does not consist of a mere collection of prescriptions to be prescribed in the treatment of this or that affection, although in it is found hundreds of prescriptions by the most eminent physicians, but it affords the reader an intelligent idea of the combining of remedies for the fulfilling of such indications as will be apt to be presented in the practice of his art. "So far from leading him to become a mere formularumpræ scriptor, the diversity it exhibits teaches him independence of thought; while the care with which the indications, calling for particular remedies or combinations, are given, awakens and instructs his power of clinical observation."

THE ELEMENTS OF THERAPEUTICS. A Clinical Guide to the Action of Medicines. By Dr. C. Binz, Prof. in University of Bonn. Translated from the 5th German edition, and edited with additions, in conformity with the British and American Pharmacopæia, by Edward I. Sparks, M. A., M. D., Oxon. 12mo, pp. 347. 1878. New York: Wm. Wood & Co. Cincinnati: R. Clarke & Co.

This work of Dr. Binz will be found highly convenient to both students and practitioners. It furnishes, in a small compass, all the principal therapeutic properties of the main articles of the materia medica; and that is

what the student and physician care for.

The book is divided into twelve chapters, each one of which is devoted to a particular class of remedies. For instance chapter first discusses the *Nervina Depressoria*, commencing with opium, and describing, besides, the uses of belledonna, hyoscyamus, stromonium, calabar

beans, etc. Another chapter takes up the Anti-pyretica, or medicines which reduce fever, as the cinchona barks, different salts of quinia, berberiæ sulphas, ac. salicylium, the various mineral and vegetable acids, etc. Another, Evacuentia, which include emetics, purgatives, diuretics,

diaphoretics.

As all are aware, our German brethren are accurate observers and profound thinkers; and their productions, therefore, are well worthy of study. Their works generally are not mere collections of a vast amount of crude, unsystematized facts, compiled from a lage number of sources, but consist of the unfolding of truth which has resulted from close attention of any subject, and which may be applied to practical use.

We bespeak for the work no little popularity in this

country.

EDITORIAL.

NEW VOLUME.—With this issue we begin the eleventh volume of the MEDICAL NEWS. In January, 1868, it started out as a candidate for public favor—2,000 copies being issued and sent everywhere, where it would be likely to meet with a favorable reception. Although our subscription list that year did not succeed in obtaining 2,000 bona fide subscribers enrolled upon it, yet that many copies were sent out every month; and thus the NEWS became well known throughout the whole country. With the beginning of subsequent volumes we were enabled to chronicle, each time, progress—a larger subscription list, new friends, an increase in the number of and more intelligent contributors, and other indications of prosperity. We are now ten years old and past, and feel, consequently, that we have reached to the full years of maturity—even to being somewhat old; for not a few medical journals, in the meantime, have been started, lived a few years, and passed out of existence.

The Medical News began with thirty-two pages each issue. It now numbers seventy-two each month—occasionally eighty. Although the price has been increased as the journal has been enlarged from time to time, yet the increase in price has not been in proportion to the

enlargement—the latter being proportionately greater than the former. It is now, undoubtedly, the cheapest medical journal published in the United States. The large majority of those of sixty-four pages charge \$3.00—

we, for seventy-two pages, ask but \$2.50.

Our journalistic brethren often speak of letters of recommendation which they have received, eulogizing their respective journals. We have been the recipient of many, very many such--not a few of them coming from those high in the profession. But, although we feel grateful for kind and flattering expressions, yet we are in the habit of placing a measure ourself upon our efforts, which is not increased by praise nor lessened by disparagement. Therefore, when we compare our journal with others, we feel quite sure that it is fully up to mediocrity-that in merits it does not fall short of any of them. This we know from the fact that its original contributions have all been from gentlemen of high standing in the profession-some of them having become eminent—and its selections have been carefully made from the best sources.

We do not desire it to be understood that we consider that the Medical News has attained to a point that it can not be improved. We feel that there is room yet for improvement, and that it can be made a better journal than it has ever been. We are aware of imperfections that have been existing, and which have been let to continue, for the reason that our busy life did not seem to afford time to correct them. But in the future the necessary time and labor for improving the journal will be given it, and, hereafter, it will more than ever represent the progress that is going on in medicine and those sciences closely collateral to it. Beside publishing original contributions, as in the past, we propose to industriously search the journals of this country and Europe, and cull from them, as far as possible, the experiences, suggestions, and best thoughts of the most eminent men of the profession. By means of abridging in some instances, in others making a brief synopsis, the News will afford ample space to give a large portion of the most valuable matter that is published in the various journals. This system of culling we propose to make a prominent feature; for we propose to present to our readers, from month to month, valuable reading

with interest.

matter—reading matter that will tend to make them better physicians and more intelligent men.

As the microscope has become a sine qua non with the physician, as much as the clinical thermometer, for several years we have been devoting a number of pages to a Microscopical Department, in which we have placed articles, treating of structures and diseases, which only could be studied by that instrument. Medical science owes to the microscope its being a science. It is to medicine what the telescope is to astronomy. Without its aid medicine would be as primitive and rude as astronomy without the aid of the telescope. Differences in structures of tissues would not be recognizedorgans would be regarded as homogeneous masses, and the blood would not be known to possess such bodies as the red and white corpuscles, which play so important a part. Although all physicians are not expected to be original investigators (yet every physician should add something to the general knowledge), yet all should take a lively interest in what is being done in every department of medicine, and especially in any branch in which the investigations are more likely to lead to important discoveries. But little is to be expected from him who is only interested in prescriptions—in "what is good for this and what is good for that."

We design to continue the *Microsopical Department* the present year, but we propose to make it as interest. ing and instructive to those who are not especially engaged in microscopical research as to those who are. We feel sure that to all who take pleasure in studying works upon physiology and pathology, whether they do or do not use a microscope themselves, the Microscopical Department of the Medical News will be perused

The fact that the Medical News is the only medical journal that gives especial attention to those natural sciences which form the basis of medicine, but which belong to the general knowledge, very many scientists are subscribers to it who are not physicians. We are glad to welcome them; for we have no doubt that a closer association of the cultivators of science in different departments will be of mutual benefit.

We desire to draw attention to the fact that Drs. Miles and Bramble have ceased their connection with

the Medical News. Their connection with it will cease, both editorially and in a business way. Drs. R. C. S. Reed and J. A. Thacker are the sole proprietors and editors. The latter, as previously, will continue to act as agent and manage the business of the journal.

Parties in directing their correspondence, and making remittances to the MEDICAL NEWS, should make a

note of the above facts.

Longview Lunatic Asylum.—Not only the profession, but the community, were much astonished recently to learn that Dr. O. M. Langdon, who, some time ago, held the position, had been appointed Superintendent of Longview Asylum. His conduct, while the incumbent, had been of such a character that no one supposed that the trustees would ever entertain for a moment a suggestion to reinstate him. Certainly, if ever one demonstrated an unfitness for such a position he did—an unfitness both as regards mental and moral qualifications.

Without refinement, but coarse in manner; having no education, but uncultivated, his appointment should not have been thought of in the first place. If learning be not necessary for the place, at least a general intelligence should be possessed; and if piety be not insisted upon, it is not unreasonable to expect common morality. But Dr. Langdon, previous to his appointment, had only exhibited capacity as a "bummer."

While in office, a few years ago, he managed the institution as a boarding-house, and a very poor one at that, so far as attention was given to the daily corporeal needs of the inmates were concerned; failing to exhibit the slightest comprehension of the grand purposes of a hospital for the insane—to restore back mind to those bereft of reason, to set a burning again the lights of intelligence that had gone out. And, worse still, acts were committed that were shocking to common de-In fact, so much scandal was excited that the Superintendent's picture appeared in a number of the Police Gazette. Yet, notwithstanding all this, the trustees have reappointed him. Surely they can not but expect to forfeit the respect of the community. If it were not the asylum was supported by taxation this appointment would destroy it. If placed at the head of a private hospital for insane of five or six hundred patients, we feel confident it would be emptied in a month.

· We learn from the Gazette, of January 9, that when Dr. Langdon was discharged from the superintendency of Longview, six or seven years ago, serious charges were preferred against him, which have never been satisfactorily answered by him. He kept a little receipt book, which was withheld from the hands of the bookkeeper. When receipting for the board of pay patients he was in the habit of entering upon the stub of the book a less amount than he receipted for. One or two cases coming under the eyes of the Board, in which the receipts for the money actually received were larger than the stubs showed, caused an investigation. Correspondence was instituted with the parties paying, and in course of time evidence accumulated of a discrepancy of \$5,000 or \$6,000, although a large number of the parties written to failed to respond, possibly be. cause of removals, loss of receipts and other such reasons. Suit was instituted against him in the name of Hamilton County for the recovery of the discrepancy. Dr. Langdon set up a counter claim for about \$39,000, the principal items of which were for superintending the erection of a stable, milk-house and engine building, which he claimed did not belong to his duties as Superintendent of the institution. Other items were for the pay of assistant physicians and officers at times when the positions were vacant, on the ground that he had performed their duties, and was, therefore, entitled to their pay. And other items still, and large ones, too, for laces and embroideries presented the female attendants, and wines and cigars used in treating visitors to the institution.

In his argument in this case, Mr. Gerard, the Prosecuting Attorney, said that Dr. Langdon ought to congratulate himself that his case had not been tried in the Criminal Court, and claimed then, as he claims still, that many men have been tried for embezzlement against whom there was not as clear a case as the present. Mr. Gerard says that the trial showed that there was no systematic accounts of expenditures, and that thousands of dollars were disposed of in a manner which nobody understands. Dr. Langdon spent the money of the asylum just as he wanted to, and ran the institution

with as little recognition of authority as if it belonged

to him exclusively.

Parties familiar with the management of Longview under Dr. Langdon's administration assert that he ran it as a jail, in which patients, officers and attendants were all prisoners. Many other acts, showing his unfitness for the superintendency of a lunatic asylum, could be mentioned of Dr. Langdon while at Longview, but we do not care, at this time, about occupying the space. Conduct took place that would seem incredible to those who had not been made aware of it.

NEW MEDICAL COLLEGE.—We understand that a movement is being made in this city to establish, a year from the coming spring, a medical college which will hold its sessions during the spring and summer. There is no doubt there are more than enough of medical schools in Cincinnati to supply the requirements of students who seek this city to complete their medical education; but it has been brought about that they are all in session during the autumn and winter, a time of the year when very many can not attend lectures, and, consequently, instead of coming to Cincinnati for collegiate advantages, where they naturally belong, they are under the necessity of seeking distant cities. We are opposed to the excessive multiplication of medical colleges, for when there are too many the patronage becomes so divided and the facilities so lessened in the way of means of illustration, in consequence of the little income realized, that it is impossible for them to discharge the functions of colleges, except in the bestowing of diplomas. But when a real want exists it is proper to fill it. If a dozen medical schools should be established in Cincinnati, all to hold sessions during the fall and winter, there would be none the less a need for one that would hold its sessions during the spring and summer, so long as medical education in this country is conducted as it is-attendance upon two courses of lectures of four or five months' duration each.

It is a well-known fact that very many of the best young men who aspire to enter the medical profession are quite unable, from circumstances surrounding them, to attend lectures during the autumn and winter. Some of these are teachers, who, being compelled to rely upon their labor for means, find teaching most profitable during the cool season. There certainly should be an institution to accommodate such. We have had very considerable opportunities for observing the quality of classes of winter sessions and of summer sessions, and have invariably found the superiority of the latter over the former so marked that no one could help but acknowledge it—superiority in learning, general intelligence, culture and refinement. We speak of the classes as a whole. We do not wish to disparage individuals attending a winter session.

The new college, if it should be organized, will, in no sense, be in opposition to any of the present colleges of Cincinnati—not so much so as they are to one another. Its students will be those exclusively who, if it were not in existence, would seek the summer schools of distant cities. The high standing of the gentlemen moving in the matter is a guarantee that the faculty will be a very

superior one.

A Growing Nuisance.—"The please-send-me-a-specimen-copy-of-your-valuable-journal man is plainly on the increase. He is becoming more frequent; in fact, he is without number and ubiquitous. In former days he hid his request (but never a stamp for return postage) in an envelope. Latterly he selects the curtly business "postal" card, thereby cheapening the cost to him a couple of coppers, and making an inclosure impossible. In all the years of our editorial life—and we trust our 'sands have' not yet 'run out' by a long shot—we have never seen the color of the send-me-a-specimen-copy man's money. We are beginning to fear we never shall. Hope, indeed, has been so long deferred that it has fled our breasts entirely."—Ex.

Previous to the introduction of postal cards, the specimen-copy man used to send us a request for a "specimen copy of your valuable journal" about three times a week, never inclosing a stamp to prepay the postage of the "specimen" (he is never guilty of such foolishness;) but now we receive five and six such requests a day. There are about twenty-five medical journals published in the United States. Two or three years ago the specimen-copy man, by investing a quarter in postals, and

sending around to the different journals for specimens, would realize from it at least 1,500 pages of reading matter; but since medical publishers have become posted in his little game of fraud, we do not believe a twenty-five cent investment yields him a single page. Specimen copies of the MEDICAL NEWS can only be obtained from us by inclosing twenty-five cents.

Parvules.—Some of our readers will probably inquire, "What are Parvules?" Well, they are a new class of preparations made by Wm. R. Warner & Co., of Philadelphia, designed for the administration of medicines in minute doses for children, and for frequent repetition in case of adults. It has been proven by experience that small doses, in many cases, frequently repeated, have a more curative effect than large doses, or medium doses, at long intervals. We have very frequently noticed this, especially in such medicines as tartar emetic. In febrile affections and in pulmonary diseases, tartar emetic is more curative when given in doses that will admit of its administration every half hour than when administered in quantities that will only permit of its exhibition every three or four hours.

W. & Co.'s parvules embrace some forty or fifty remedies. Among them we notice arsenic, 1-100 grain; pulv. campe. 1-20 gr.; calomel, 1-20 gr.; gelsemin rad. 1-50 gr.; pulv. opii, 1-40 gr.; morph. sulph. 1-50 gr.; tar-

tar emet., 1-100 gr.; quin. sulph. 1-10 gr., etc.

We have no doubt the preparations will become very popular with the profession. They are put up in bottles of 100, and are sold at 40 cents a bottle. Sent by mail to any address.

OBITUARY.—Dr. S. D. Turney, of Circleville, Ohio, died Tuesday morning, January 22d. He was born December 26, 1824. At the commencement of the war he was the surgeon of the 13th O. V. I. He served as medical director on the staffs of Gens. Crittenden and Vancleaf, and was medical inspector of the district of Northern Alabama. He was Surgeon-General of Ohio under Govs. Hayes and Noyes. At the time of his death he was Professor of Diseases of Women and Children in Starling Medical College.

M. Herold & Sons, No. 166 Central Avenue, below Fifth Street, of this city, keep a large assortment of miscellaneous books on hand, old and new, consisting of works on history, biographical works, travels, voyages, novels, scientific, etc. It is, par excellence, the place to find old and rare books. They also keep standard medical works of the latest editions, which they sell a fourth less than can be procured at any other place. The MEDICAL NEWS can be had of them, either by the year or single copy.

Mr. Herold, Sen., is one of the most artistic penmen in this country. He fills diplomas, writes certificates, testimonials, resolutions, deeds, etc., in the best style of the calligraphic art. His specimens are of the most beautiful kind and command the highest admiration. Those having need of ornamental writing, we will guarantee, will be entirely satisfied by applying to him. His charges are very reasonable. We would invite persons to call

and see his specimens.

The Atlantic Monthly.—This most popular magazine, published now by Messrs. H. O. Houghton & Co., of Boston, has recently consolidated with it the Galaxy, thus widening its field and strengthening its hold upon public favor. It presents a very attractive programme for the coming year—serial stories by W. D. Howells, Henry James, W. H. Bishop; short ones by Aldrich, Cooke, Woolson, DeForest and others; sketches and essays, with a large variety of other contributions, by such noted writers as Mark Twain, Warner, Aldrich, Norton, Whittier, Longfellow, Holmes, etc. A beautiful life-size portrait of Whittier, the Quaker poet, whose name is known wherever the English language is spoken, will be sold to all subscribers for the low price of one dollar.

Notice.—Persons receiving this number of the Medical News, and not proposing to continue as subscribers, should notify us immediately by returning it, with their name and address written plainly upon it; others, to insure its continuance, should remit at once. A great many subscribers, during 1877, were very slow in remitting the subscription price. We hope that this will not be the case the present year. All should remember that our terms are in advance.

THE

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PRIGINAL CONTRIBUTIONS.

The Opinions, Past and Present, of Col. J. J. Woodward, M. D., U. S. Army, in Respect to Typho-Malarial Fever, and Some Other Subjects.

BY ROBERTS BARTHOLOW, M. D.

THAT the readers of the MEDICAL NEWS may have a true conception of the differences between Col. (by brevet) J. J. Woodward, M. D., of the Surgeon-General's Bureau, and my humble self, "formerly an assistant surgeon in the army," I must reproduce here the main points in the history of this controversy. In a small pamphlet, reprinted from the Clinic, I have entered into details with sufficient fullness to enable any one to verify or disprove any statement made by me, on any point at issue between Col. Woodward and myself; and it will afford me pleasure to send this pamphlet, free of expense, to any gentleman who desires to be informed in the merits of this discussion. As Col. Woodward has furnished the editor of this journal, for distribution, some copies of the paper read by him before the Medical Section of the International Medical Congress, and as the accuracy of the quotations made by each is not in dispute, it may easily be determined how far the Colonel's profuse charges of misrepresentation are true or false.

Stated chronologically, the order of events is as follows:

1. The criticism by me of Col. Woodward's opinions in the "Sanitary Commission" volume, published in 1867.

2. The reply of Col. Woodward, in a paper read before the Medical Section of the International Medical Con-

gress at Philadelphia, in 1876.

3. My review of Col. Woodward's opinions, as given forth in his volume on "Camp Diseases" and in his address before the International Medical Congress. This review was published in the *Clinic*, and reprinted in pamphlet form, 1877.

4. The rejoinder of Col. Woodward in the MEDICAL

NEWS.

In a note to my paper in the Clinic, I offered the columns of the Clinic to Dr. Woodward for his reply. He vouchsafed no notice of this courtesy. He sent to the editor of this journal some copies of his pamphlet and his rejoinder to my review. It is necessary to make this statement, lest it might appear that the Colonel was forced to reply through the MEDICAL NEWS.

1. The very inception of this controversy is to be referred to that momentous event in medical history when the Colonel, by a stroke of genius, invented the term "typho-malarial fever." Having the term quite pat, he must needs fit it with a pathology to correspond.

"Now might I do it pat."—Shakspeare.

Accordingly, in his work on "Camp Diseases" the Colonel describes a new disease. He shows how easily this new disease may be recognized; how it differs from all other maladies, and how very appropriate is the name which, in a moment of inspiration, he had evolved from the depths of his innermost consciousness. There seemed good prospect that this new disease would appear all along, in the medical history of the future, as "Woodward's Disease"—like "Bright's Disease," "Graves' Disease," etc. Truly it was, and is, Wood-ward's disease, but the merit of its inventor is somewhat different from that of Bright and Graves. Woodward created his, but did not observe it-made it out of whole cloth, in fact-while Bright and Graves arrived at a knowledge of the maladies known by their names by methodical observations and original research. Though aware of his mistake, Col. Woodward was slow

to acknowledge it, being driven to a recantation ultimately lest a mortifying exposure should be made. His book on "Camp Diseases," although dead and forgotten by the medical profession, is yet known to antiquaries, and any number of volumes can be obtained, possibly, so far as we know, for the price of old paper. No doubt the young man ("paid as a clerk of the first class") intrusted with the microscopical work of the Army Medical Museum (for which the Colonel absorbs the credit) long since pointed out those errors of supposed microscopical observation put forth as original discovery. So Col. Woodward, in his paper read before the Medical Section of the International Medical Congress, recanted his former doctrines. He recanted with a great flourish-with a tremendous outburst of moral enthusiasm. Here are his words:

"During my earlier studies, I believed that I had observed certain peculiarities in the character of the ulcers in these cases, by which they might be distinguished from the lesions of simple typhoid. A larger experience, especially the examination of a large number of specimens received by the Medical Section of the Army Medical Museum, has convinced me that this appearance was somewhat premature. I renounce it as erroneous. There is really nothing in the lesions of Peyer's glands, in these cases, to distinguish them from

ordinary cases of typhoid fever."

This is ingenious and ingenuous-ingenious in displaying that refined sense of scientific honor (I believe that is the Colonel's phrase) for which this great scientist has been distinguished; ingenuous in that the bland author, moved by noble impulses, appears as if to beg forgiveness of his colleagues for his little sin. To any one familiar with the history of the transaction, the confession is simply ludicrous. The reader should remember when the long-since-forgotten "Camp Diseases" was published. The preface is dated November 2, 1863. The reader should also remember that "the large number of specimens received by the Medical Section of the Army Medical Museum" must have been in 1864-5, for the war terminated in 1865. It is, therefore, quite evident that the Colonel's discovery of a new. disease, and his discovery that his new disease was a fraud, must have taken place within four years.

International Medical Congress assembled in Philadelphia, September 4, 1876. For at least ten years, although conscious that his pretension to the discovery of a new disease was false, he permitted the error to stand. When at last the Colonel condescended to notice my observations on his pretended discovery, he made no reference to the fact that I had long since pointed out his error, but covered up the real issue by an attempt to give my criticisms a personal aspect.

When the Colonel discovered a new disease, he worked out his results with the microscope; when he discovered that his new disease was an old acquaintance, he still worked with his microscope. Doubtless with the same instrument, certainly with the same brain, eyes and hand, he arrived at results diametrically opposite. In that remarkable address before the Congress, on the scientific work of Col. J. J. Woodward, alias the Medical Staff of the United States Army, we find this morsel:

"In connection with these investigations, the question of the scientific certainty [sic] of microscopical appearances has constantly been thrust upon me, and I have been forced to the conclusion that not unfrequently, especially when high powers are used, the false appearances resulting from diffraction and interference have been mistaken for real structure. This would be a melancholy conclusion were I unable to point out how such misrepresentations may be avoided."

The great microscopist might have included faulty modes of preparation of microscopic objects, and have illustrated this by his own preparations, showing that

typho-malarial fever is and is not a new disease.*

2. The Colonel affirmed, in his typho-malarial fever paper, that my criticisms were "acrimonious." The phrase most offensive to the very sensitive Colonel is this: "His views being erroneous must exert a mischievous influence." It seems to me that this is a mild expression to apply to a false statement of a scientific matter. As he has, after ten years' silence, during

^{*} Not long since, Dr. Klein, of London, who had discovered minute organisms of a peculiar kind in connection with the typhous process in the intestinal mucous membrane, was forced to acknowledge that his organisms were bits of albumen, and that the appearances thus caused were due to his mode of preparing his microscopic objects.

which he has worn his spurious honors, admitted that his pretended discovery was false, he ought to congratulate himself, and thank his critics for being treated with a leniency quite out of proportion to his high crime.

The Colonel is also offended because, in a criticism of his system of nomenclature, I remarked that he had made "three varieties of typho-malarial fever: malarial, scorbutic and enteric-distinctions as unmeaning, clinically, as the terms themselves are tautological." Are not these remarks eminently justified in the light of subsequent events? The terms enteric form of enteric . fever, malarial form of typho-malaria fever, etc., are certainly unmeaning, clinically, and tautological. It is only the infatuated parent of an idiotic brood who could hold that such ill-omened objects are æsthetically and scien tifically appropriate. The truth is, the Colonel wished not only to appear as the discoverer of a new disease a scientific pathologist-but also as an acute-minded and practical physician, able to make the nicest distinctions, and to differentiate in phrases to the outermost boundaries of metaphysical subtlety-a great clinician.

I believe the Colonel maintains that all my criticisms are misrepresentations of his views. By holding that I am unworthy of belief, he answers, by one affirmation, all my points, and leaves me floundering in his own

mud, defenseless.

When the Colonel calls me a "mere borrower," his virtuous indignation boils. He thinks that the benighted physicians of Cincinnati must go to him for their knowledge of Drake's Views. I have borrowed from him what Drake has had to say about the mingling of malarial and typhoid, and the name which Drake has coined to designate the composite malady. I admit, at once, that it is my poor way of putting things, and not the Colonel's lack of critical insight, which has confused him in this matter. With a pretended intention to offer a great array of authorities to show that the doctrine of a typho-malarial fever had obtained full recognition long before Col. Woodward had turned the electric light of his gigantic intellect on the subject, I referred to Drake distinctly, and alluded, in a vague way, to other clinicians. In the series of reports of his own bu-

reau (from 1839 to 1854), the Colonel might have found reasons for believing that similar opinions were entertained by the officers of his corps many years before. The works, memoirs, papers, bearing on this topic overlooked by the Colonel, are so numerous that I was justified in the attempt to ridicule the poverty of his biblio-

graphical resources.

3. I have remarked, in my pamphlet, more in sorrow than in anger, that Col. Woodward has been spoiled by too much praise. The work of the Surgeon General's Bureau which has appeared in his name; the respect and attention with which he is always heard by the American Medical Association; the important office which he holds in the Medical Department of the Army, etc., have contributed to develop an arrogant conceit which is well-nigh boundless. His pretensions to scientific knowledge, and to the discovery of important principles in physics, and facts in pathology, are simply marvelous in the demand made on the credulity of men. Probably there never was uttered a more absurd farrago of egotistic pretension, personal, official, and scientific, than in his lecture before the International Medical Congress, on "The Medical Staff of the United States Army, and its Scientific Work." Considered apart from the great subject of J. J. Woodward, which was its leading theme, the topic itself was singularly inappropriate for such an assemblage. The affected modesty of the lecturer and his grasping claims, his devotion to science and abnegation of self, are, it may be said, feelingly depicted. We may suppose that the able lecturer, in describing what he had done and suffered, had a tear in his eye and a sob in his throat. He shows us how hard he had to work, and how little was the assistance afforded him. "A single assistant [the young man alluded to before], paid as a clerk of the first class, constitutes, under my direction, the whole personnel available for the work." A clerk of the first class has a salary which might tempt the Colonel himself if he had not a somewhat warmer nest. This clerk is a person of much better scientific training, and more thorough and extensive knowledge of microscopy, there is reason to believe, than is the Colonel himself. For the opportunity to pursue scientific work, the assistant is quite content to accept very good compensation, and permit the Colonel to take

all the honor, It is a sorrowful fact that scientific men have but little opportunity for lucrative employment, and are, at best, poorly paid, as compared with the pay of a clerk of the first class, in the various departments of the government service at Washington.

Standing before the members of the International Medical Congress, in a lecture-room of the Jefferson Medical Congress, the Colonel had the extraordinary cheek to

make the following remarks:

"The process, by which the photographs I am about to exhibit, were prepared, was, as most of you are aware, brought to its present state of perfection by my own original investigations. A complete misconception exists, in certain quarters, as to the time I am able to devote to work of this class. It has been simply my amusement—my relaxation from the daily routine and toil of the other labors—which I have outlined to you to-night. For years, all the work of this kind I have been able to accomplish has been done on Sundays and holidays." [Sic.]

We call the attention of our Senators and Representatives in Congress assembled, and especially of our General Banning, Chairman of the Military Committee, to the fact that Col. Woodward, our spatriotic microscopist, still toils on in the Surgeon General's Bureau. With rare generosity he remains at his post. He does not ask to be relieved, so that other medical officers of equal ability may do their share of the never-ending toil. Sacrificing himself daily, Sundays and holidays included, he shows himself to be a martyr to science, a lover of his fellow-man, a Marcus Curtius, engulfing himself to save the scientific reputation of his country.

The manner in which Col. Woodward sacrifices himself to duty was conspicuously exhibited "in those labors connected with the Centennial," as he himself puts it. As a showman of the model hospital of the army, in the grounds of the Centennial Exhibition, Col. Woodward was much and closely occupied. How his system withstood this responsible and harassing occupation is not so well known as all matters relating to the Colonel—a historical personage—should be. We venture the following theoretical explanation of these dubious historical points:

Philadelphia, "the City of Brotherly Love," is a famous place for the brewing of those beverages which promote

good feeling. Mint grows in abundance along the banks of the romantic Wissahickon, and the cellars of Philadelphia are fragrant with the mighty Bourbon. Under the suggestive name of "mint julep" a divine beverage is prepared, more potent and life-giving than the elixir of Paracelsus. It is not according to the canons of good taste, in the "City of Brotherly Love," to begin the day's libations before 11 A. M. Accordingly, as this hour approaches, watches are frequently consulted, and straining eyes, every few minutes, are turned up to the clock towers (official time). As the hour strikes, an invocation is made, and the divine beverage begins to work its mission of charity. I do not vouch for the accuracy of the statement, but it is said that a very moderate quantity. at short intervals, enabled our friends, the representatives of the Medical Bureau, to bear with equanimity the severe "labors connected with the Centennial." As the Colonel returned to Washington in fairly good condition, notwithstanding the severity of these labors, I have adopted the theory-without being sure that it reconciles all the facts—that the Colonel could not have borne all those "labors" without being sustained according to the Brunoman system.

4. I must now conclude, for the present, at least, with a few observations on some grievances over which my high-toned antagonist laments. In my pamphlet, replying to the Colonel's Centennial effort, I sought to assuage his anguish by reminding him that my criticisms could not be dictated by animosity, when I had spoken of him in terms of high praise. As the Colonel had not seen these panegyrics, he assumed that they did not exist; but if he will condescend to look over the files of the Clinic, he may read some notices of the publications of the department in which his talents, his industry, his zeal, his amiability, his integrity, his suavity, his gravity, his congeniality, but not his consequentiality, are

suitably stated, indorsed and enforced.

The Colonel also applies the Socratic method to a little paragraph in the *Clinic* over my signature, in which reference is made to a playful phrase ascribed to him, to-wit, that "He is a terrible fellow in a controversy." As in respect to the panegyrics, Col. Woodward will not admit that his playful phrase was ever uttered, because he has forgotten it, this self-same phrase was

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uttered by the Colonel about 11 o'clock, in the office of registration of the International Medical Congress, on

Monday, September 4, 1876.

I now close my surrejoinder to the Colonel's rejoinder. He has declined, in advance, to reply, or to notice me further. When looking over this, as he may do, on some night, Sunday or holiday, it is probable that he will change his mind, and will come out with a replication to my surrejoinder. I suggest the 22d of February as a suitable day on which to write this replication. It will, of course, make a hiatus in optical and microscopical science, if the Colonel wastes this precious holiday on such an unworthy subject; but he may feel that the truth of history must be vindicated. If he does make a replication, I am sure it will amply demonstrate that the Colonel is a terrible fellow in a controversy.

Syphilis.

BY DR. J. S. WEATHERLY, OF MONTGOMERY.

READ BEFORE THE MEDICAL ASSOCIATION OF ALABAMA.

I WISH to call the attention of the Association—or perhaps I had best say, of the State Board of Health—to a subject that has long since impressed itself upon my mind as being of more importance to the profession and the people than any other subject connected with medicine. I do so with some reluctance, from the fact that most people are disposed to look upon all reforms on any proposition looking toward radical changes in the old way of thinking and doing things, as bosh and impracticable.

But, as I told you once before, what is looked upon as chimerical to day, may be received to-morrow as sound good sense. A few years since, I recommended in my presidential message, that the State should commence a system of drainage, looking to the gradual extermination of malaria. Some of my friends said that it was the merest fancy, and that it could never be of any practical value—yet, the State of Michigan has already, under the direction of her State Board of Health, commenced

work, and has reclaimed some of her swamp lands, and with well marked benefit to the health of her people. If Michigan can do these things, why not Alabama? However, this is a digression, and has no connection with the subject of my paper; it is offered only as an apology for recommending what, to some, may seem a foolish measure.

I desire leave to ask this body to take into consideration the possibility and practicability of devising some means for the prevention of the spread of syphilis among the citizens of this State. Some of the best minds of the country have already called attention to the subject, and Prof. Gross and Dr. Sims have read most valuable papers upon the subject before the American Medical Association, and I am not ashamed in my more humble way to add my mite to a cause that not only comes home to the hearts of the medical profession, but is of alike importance to the philanthropist, and must strike a responsive chord in the hearts of all the fathers and mothers in the land. It will not do to say that the subject is too delicate to be brought into public notice. Nothing that concerns the public and moral health of the people is too delicate to be thoroughly ventilated. I agree with Prof. Gross in saying, that it is high time that the people should be enlightened upon what is daily transpiring in their midst, and imperceptibly sapping the very foundations of society. And if no legislation upon the subject is thought advisable, if the people are thoroughly informed upon the subject, much good will be accomplished. I do not believe there is a man here, today, who would be willing for his daughter to marry a man who was affected with constitutional syphilis.

Now, if the fathers and mothers of the State were informed upon this matter as you are, they would think and act as you would, and this alone would be a great restraining influence in checking the progress of this infection.

There is not one of you but knows that this one disease is productive of more misery, more suffering, and more sin than any other malady to which flesh is heir; that from this disease, that most terrible curse, mentioned in the Bible—that the sins of the fathers should be visited upon the children, even down to the third and fourth generation—receives its most manifest proof. I

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go still farther and say, that I doubt if this infection or poison, once engrafted upon the human system, ever does die out, and that there are people now suffering from the effects of this poison whose ancestors contracted the malady ages gone by. I doubt very much if constitutional syphilis is ever eradicated from a system once thoroughly poisoned by it. And right here I wish to call especial attention to one mode of communicating this poison. I mean by that most innocent and pleasant custom ladies have of kissing their friends. You must know that the smallest portion of this poison has only to be communicated to the minutest abraded surface and you have a chancre. I have a case in my mind's eye now, where a very lovely woman, as pure, I am sure, as a woman could be, and whose husband is also correct and virtuous, yet some one of her friends, in kissing or fondling her, inoculated her and she had a perfect chancre upon her face, followed by all of the constitutional symptoms-sore throat, eruptions upon the skin, and periostitis of the bones of the legs. This was a case that any physician, with the slightest knowledge of the subject, would have immediately recognized. Yet, what could be done by the doctor in the present ignorant condition of the people. I was satisfied as to the innocence of both wife and husband, yet I was not sure that I could satisfy either party if I told the truth in regard to the true disease, so I equivocated, and am still equivocating; but the seed has been sown, and sown into pure ground, and where it will end I can not tell. Many a venom, little suspected, may lurk in the kisses of real

Prof. Gross says, "How long does this infection last? Does its effects ever wear out? Is the taint of the system thus engendered eradicable by treatment?" These are startling questions, answered differently by different observers, and therefore far from being satisfactorily settled. The idea has occasionally been advanced, that syphilis, like small-pox, measles and scarlatina, is a self-limited disease, tending in persons of a sound, vigorous constitution to spontaneous cure; but such a view is certainly not borne out by the facts of the case. The disease, if left to itself, never wears itself out; its character may be altered or modified, but the poison, like an enemy in ambush, still lurks in the system, ready to

explode with full force upon the slightest deterioration of the general health. I have repeatedly witnessed cases in which the poison remained in a state of latency for ten, twenty, thirty, and even forty years, the individual being apparently well all the time, when either gradually or suddenly, from some intercurrent disease or accident, it broke out in some particuar structure, tissue or organ of the body, perhaps selecting a spot hardly the size of a dime or twenty-five cent piece for the theater of its operation and the development of its zymotic action. This is one of the old sins; but age should not make any vice sacred. Neither is it necessary, because David and Job suffered from constitutional syphilis, that we, in this enlightened day, should be willing to stand still and see innocent people suffer from its ravages. I do not say that David and Job were bad men; they have themselves described their symptoms too well for any physician to doubt of the disease from which they suffered. But it shows that the very best of men may suffer from this most loathsome disease, and when it may not have been a fault of theirs. I agree with Prof. Gross in thinking that it commenced at a very early age of the world, probably was transmitted to us by prehistoric man. Neither do I believe that its force is gradually wearing out. I do believe, however, that its ravages have been modified by more scientific treatment; but that the poison is just as virulent now as it ever was. I think that the history of its ravages among some of the Pacific Islands, and among some tribes of Indians, is full proof of its virulence. Some of these ignorant people have almost been entirely swept from the face of the earth by its ravages, and this, too, within our own time. It is not syphilis per se, that we have to contend with, but many of the hereditary diseases owe their origin to this poison. I have little doubt but that scrofula and phthisis are direct descendants from this most loathsome parentage, and also many cases of rheumatism and likewise neuralgias. Of course this will be a shock to the refined sensibilities of some of these sufferers, but it is not their fault, they are simply expiating the sins of depraved ancestors. Prof. Gross says, "If the statements, now presented, be true, it must necessarily follow, that a disease, the specific principle of which remains so long in the system, must have, so to

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speak, many outgrowths, hanging like Lethe upon its outskirts and exhibiting themselves in a great variety of forms, often described as so many separate and independent affections under different names. What is called scrofula, struma or tuberculosis, is, I have long been satisfied from careful observation of the sick and a profound study of the literature of the subject, in a great majority of cases, if not invariably, merely syphilis in its more remote types. It is, in short, a proteiform malady, capable of assuming a great variety of forms, often as difficult to distinguish as it is to treat them." If I had time I might here enumerate many forms of scrofulous affections which no doubt have sprung, and are still springing, from this most prolific source of contamination.

Certain it is, that none of the preventable diseases are so horrid in their effects as this. In cholera, yellow fever, small-pox, etc., the victim either dies or gets well, or at least, as a general rule, is the only sufferer. But in this a black stream of venomous poison is let loose that travels down the course of time, tainting and blighting the blood, ave, and the intellects of untold descendants from the parent spring. The innocent, yet nursed in the womb of time, together with those already here, are doomed to suffer from this awful curse inflicted upon them by the vitiated constitutions of their ancestors. Many of the best writers and thinkers of the age are now satisfied of the connection between syphilis and consumption. Prof. Gross says, that he can not see how any one, who has had much experience in this class of diseases, or who has made himself familiar with the literature of the subject, could come to a different con-Mr. Jordan says we can manufacture strumous disease at pleasure, since all that is necessary is to bring into contact two persons affected with hereditary syphilis, and they will be sure—especially if, in addition to this taint, they have a muddy complexion—to produce children one of whom will have phthisis, a second enlarged glands, a third Pott's disease of the spine, a fourth coxalgia, or hydrocephalus. If I had time to produce statistics, showing the fearful mortality among children from the effects of this poison inherited from parents, persons who have not examined the subject would stand appalled and aghast at the sickening spectacle. The children of these infected people, "like apples which rot

upon the tree before they are ripe, drop dead from their mother's womb, or, if they are born alive, they are sure

to perish soon after birth."

When cholera, small-pox or yellow fever threatens to invade our country, every one cries out for something to be done to prevent their spread; people leave their houses and flee in terror from these much and justly dreaded pestilences. Yet they sit quietly and contented, whilst a pestilence much more to be, dreaded is gaining force daily, and whose noxious waves are sweeping over the land, leaving a curse upon its victims that no prayers, however fervently they may be uttered, can ever remove.

Now, the question arises, shall we, in this enlightened age, fold our arms, and say that this is one of the old sins that has been clinging to the world so long, that it would be folly to attack it? No, gentlemen, it is our business to attack vice and ignorance wherever they interfere with the health of the people, and the or hey who shall devise some plan for the prevention and final eradication of this most gigantic evil, will have his or their names wrung down the everlasting steps of time to the

music of grateful hearts yet unborn.

What this plan shall be, is the thing I wish you to What is known as the "Contagious Disease consider. Acts," in England, has answered a great purpose, but might not be practicable or applicable in this country. The plan, whatever it is, could be carried out as soon as we have County Boards of Health organized over the The simple inspection of known prostitutes should not be enough, but every one, male or female, as soon as known to be suffering from syphilis, should be guarded or isolated in some way so as to prevent the communication of the poison to others. In incorporated towns the difficulties would not be so great, as the police force could be brought to the aid of the health inspectors; and if the disease could be controlled in the cities, it would soon die out in the rural districts. But you say, we would have no right to interfere with the personal liberty of a citizen. Would the law have a right to stop a thief from entering your house, or an incendiary from burning your barn down? Yet your house can be rebuilt, and your stolen goods replaced; but who can bring back the smooth and beautiful skin of health to

your daughters and sons, who may have become infected with this poison? You say that the people will not submit; but I firmly believe, if the people were instructed properly upon this subject, they would lead the doctors, and force some measure for their protection. Why, some young men think that it is manly to have the disease, never dreaming, in their utter ignorance, that their manhood will soon be so endangered that their whole after-life is one prolonged misery, and that if they ever marry, their consciences will be forever pricked as they see their little innocents, with the unmistakable marks of their own folly, gradually sinking to premature graves.

I hope this matter may receive the earnest thought of the Association. We must recollect that what we do to-day may be the beginning of great things to come hereafter, and as we feel grateful to the great and good men who have preceded us, so our names may be softly sung in hymns of praise by a race to come after us. So, I beg of you to commence the fight to-day. You will never find a cause more holy, and if successful means for the suppression of this potent enemy to human happiness and health can be devised, a crown of ever-living glory will rest upon your heads, and posterity will never cease to chant anthems of praise to your names.

The Thermometer as a Means of Diagnosing Diseases of the Brain.

PROCEEDINGS OF THE FRENCH ASSOCIATION FOR THE ADVANCE-MENT OF SCIENCE.

TRANSLATED FOR THE MEDICAL NEWS BY R. B. DAVY, M. D.

In order to obtain the cerebral temperature, M. Broca used the thermometer, applying its bulb against the head, and afterward covering with six layers of cotton batting, corresponding to the six regions of the cranium whose temperature he examined in comparison. The batting formed a kind of crown around the head, and protected effectually the instrument from the external temperature. The two anterior ones (frontal) were

placed directly behind the supra-orbital ridges; the two middle ones (temporal) above the ear in the temporal region; the two posterior (occipital) in the occipital region. The mean temperature is obtained by dividing the sum of all the temperatures by six, but each thermometer gives the temperature of its particular region, and the results of comparing them one with another are the most important.

These experiments of M. Broca were commenced about 1865, but it is especially since 1873 that he has applied his researches to the diagnosis of cerebral af-

fections.

In order to have a foundation to start upon, it was necessary to know the normal temperatures of the different regions of the brain. For this purpose he chose persons about the same age, and with the same intellectual development, and, moreover, he placed them, as far as possible, in identical positions. He was desirous of getting the mean temperature of the brain; that of the right hemisphere in comparison to the left; and, finally, the frontal, temporal and occipital lobes, separately. But here an objection arose—the thermometer, as we have said. was applied against the scalp, and consequently separated from the encephalon by structures of various depths. The right and left frontal regions, situated at the anterior part of the temporal fossa, are only separated from the brain by a thin muscular layer, and a slight thickness of bone. The temporal regions have no muscle, and the bone is thin, but the hair, which is put aside as well as possible, is a bad conductor. cipital regions have also hair, and the depth is greater than in the temporal fossa, but these causes are verily too slight to explain the wide difference in temperature which exists in these different regions. The mean temperatures, which we are about to give, were obtained on twelve individuals of the hospital service, placed, as far as possible, in the same physiological conditions. The instrument was left in situ more than twenty min-The maximum temperature of the brain was found to be 34°.85, centigrade, the minimum 32°.80, centigrade, giving a mean of 33°.82. But if the thermometers on the left side are compared to those on the right, it is seen that those on the left indicate a sensible elevation. Thus on the right side the mean

temperature is 33°.90, while that on the left exceeds 34.°

There is, then, in the normal condition, a higher temperature on the left than on the right side, by about one-tenth of a degree, centigrade. But it is remarkable that this inequality only exists in the condition of repose. When the brain acts, equilibrium is produced, and the two sides register alike. Should we not admit, with M. Broca, that the left hemisphere is better irrigated with blood, that it receives more blood than the right; but when the brain works, the right hemishere—being less prepared and more incapable—makes greater efforts; more blood is drawn to this side, and the equilibrium is produced between the two hemispheres?

M. Broca did not stop here, but after comparing the two hemispheres he was desirous of studying in the same way the different lobes of the same hemisphere. He found that the temperature of the occipital lobe to be 32°.92, that of the temporal 33°.72, and that of the frontal 35°.28. These figures show how the frontal lobe predominates in functional activity over the tem-

poral and occipital.

Such are the results obtained by M. Broca on brains in repose. When the brain acts, the figures are no longer the same. It was difficult to give the different subjects experimented upon the same kind of work, and that which would be as easy for one as the other. Reading was, however, decided upon as being almost equally familiar to all; at any rate, to all medical students. Here are the results which he arrived at. The thermometer stood at 33°.92, centigrade, and, after reading aloud ten minutes, it had reached 34°.23, a difference of almost half a degree in favor of the brain in action.

Another result that we have already pointed out is the equalization of the temperature between the right and left hemispheres. When, for instance, in passing from repose to activity, the temperature of the left side rises 22-100 of a degree, that of the right ascends 34-100.

The clinical researches of M. Broca are no less important. He has gone so far as to give to the temperature the importance of being a certain sign in cerebral embolism, and in determining the part of the brain deprived of blood.

For a long time M. Broca has shown that, in embolism

of the extremities, curious phenomena of temperature take place. He noticed, what a priori should be foreseen, that, in embolism, the general temperature of the limb had fallen, but on a level, even with the vascular obliteration, the temperature had arisen. Some wished to explain this seemingly paradoxical fact by the constriction of the nerves which surround the artery, but this explanation is worthless, for in cases of spontaneous obliteration, as in embolism, the nerves which surround the artery can be in no wise wounded by the clot.

M. Broca has explained the local elevation of temperature on a level with the embolism, by the collateral circulation which is established. The blood, prevented from passing by the deep vessels, penetrates the superficial ones, dilates them, and the peripheral circulation being more active, the temperature will be higher. The maximum of temperature then in the limbs will be on

a level with the embolism.

In the encephalon, nothing of a like nature could take place, because the collateral vessels are not numerous enough. In cerebral embolism, seven times to ten, the clot affects the left middle cerebral, and obliterates it entirely, or one of its branches only. What takes place thoretically in this case? The blood flows no longer to the sylvian region, and, as a consequence, the temperature should fall. But the circulation will be more active in the frontal and occipital regions to compensate for the interference in the temporal; and the temperature should rise in these regions.

Let us see what the clinical observations show. M. Broca

has made two observations relative to these facts.

The first case was that of a rheumatic woman who was suddenly stricken down with hemiplegia, with loss of speech. The thermometer was used, showing a temperature as follows:

LEFT SIDE.	RIGHT SIDE.
Frontal Lobe35°.2,	Frontal Lobe34°.8
Temporal "34°.3,	Temporal "34°.8
Occipital " 35°.6,	Occipital "32°.9

By this table it is seen that the reduction in temperature is better marked in the temporal region, which is supplied by the middle cerebral artery. The temperature of the right temporal lobe is seen to be higher, which is the contrary of what takes place in the normal condition. It is moreover seen that the temperature of the frontal and occipital lobes, especially the latter, is very much higher than is generally obtained. Theory and practice are in perfect accordance in this case; and we should then admit that in the region of the embolism there is a

diminution of temperature.

In the support of this opinion M. Broca mentioned a second case, but remarked that it was too much like the first to be reported in full. The temperature in the left temporal region was less than the corresponding region on the right side, and that of the left frontal and occipital regions sensibly greater than in health.—La Tribune Medicale, No. 479.

Aural Polypus.

BY W. R. AMICK, M. D., CINCINNATI, OHIO.

GEORGE K.—Æt. 35. Never had any aural trouble previous to the present. On November 15 he contracted a severe cold. His tonsils were swollen and congested. All over their mucous membrane, as well as the mucous membrane of the fauces, were whitish spots, and in three or four places small ulcers. He coughed considerably, but did not expectorate any. The schneiderian membrane of the nose was considerably congested. At night the mucus would collect in the nasal passages in such quantities that they would be completely closed, and respiration would have to be performed through the mouth. He took some cough syrup, and in a few days was better. About this time he began to have trouble with his right ear. He had at times, for a few days previous to this, felt some inconvenience, but it had given him no special trouble. On the night of the 18th it was so painful that he could not sleep. He presented himself on the 19th for examination. There existed so much swelling that the cartilagin—one portion of the canal—was closed. The most careful manipulation of the auricle produced severe pain. Any examination of the internal portion of the canal or membrana tympani was impossible. By inserting a probe through the external portion of the canal, bloody serum escaped.

Leeches were ordered in front of the tragus, to be followed by warm applications. This reduced the swelling sufficiently to reveal the presence of a fleshy mass in the central portion of the external auditory canal. A solution of acetate of lead was used, which further reduced the swelling.

The polypus was lobulated and raspberry-like in appearance. It bled when rubbed with a probe. A portion of it was excised, and then caustic applied. Cauterization was repeated once a day for four days, when, at the end of this time, the body of the polypus had all disappeared, leaving a large pedicle which had its attachment in the anterior wall of the external canal, just internal to the cartilaginous boundary. The polypus was about the size of a pea, and of the mucous variety. The pedicle was destroyed by means of nitric acid applied with a glass rod. After its complete removal, an examination showed that the membrana tympani was normal. Hearing was unimpaired.

Patients are sometimes afraid to have a polypus removed, because they think another one will make its appearance. If the body of the polypus is removed, and the root left undestroyed, another one will be very apt to spring up. But if the root is thoroughly destroyed, there is no danger of its appearing again. Neither is there a tendency left for the formation of a polypus in any por-

tion of the ear.

There are different methods in use for the removal of aural polypi. The snare is a favorite instrument with some. When there is much swelling, or the polypus is very large, it is sometimes very difficult to get the wire adjusted. Scissors, hooks, knives and forceps are used.

After the body of the polypus is removed, then comes the treatment of the remaining pedicle and roots. Nitrate of silver in very strong solution is highly recommended. Others prefer the lunar caustic. At present, some of the more powerful caustics are used; such as chloro-acetic acid, nitric acid, chromic acid, etc. These caustic solutions are probably best applied by taking a probe, and wrapping a little tuft of cotton around one end; this is dipped into the acid, and then placed directly on the part to be destroyed. Care must be used not to make the tuft too large, or get too much acid on it, else the latter will run over adjacent parts, producing a slough-

ing that may prove deleterious. When the pedicle has its attachment external to the drum membrane, as in the present case, the applications are very easily made, either through a large speculum, or without such aid. In the case just cited, the applications were made without the use of the speculum. No caustic application should be made without first having the parts well illuminated. This is best done by means of the mirror and forehead band; then both hands of the operator are free for to use instruments, speculum, etc.

Cerebral Localization.

A Case of Amputation of the right thigh at the age of nineteen, followed by atrophy of the fold passing from the second left frontal convolution to the anterior marginal one—Death from tubercular pleurisy thirty-one years after the operation.

BY DRS. LE DOUBLE AND VIOLLET, OF TOURS.

TRANSLATED FOR THE MEDICAL NEWS BY R. B. DAVY, M. D.

THOMAS T——, a mason, aged 50 years, had his right thigh amputated in 1846, at the age of 19 years, in consequence of the knee being crushed by a stone; was admitted to the hospital of Tours on the 10th of October, 1877, to be treated for tubercular pleurisy. He died on the 8th of November following.

At the autopsy were found lesions peculiar to tubercular pleurisy, along with caseous epididymitis of the left side, and a collection of serum in the tunica vaginalis testis, without a trace of gray granulations. The sem-

inal vesicles likewise contained caseous products.

The general appearance of the brain was symmetrical with equal lobes. Slight adhesions united the dura mater to the pia-mater toward the upper parts of the encephalon, but without the formation of bands or hem-

orrhagic points.

On opening the dura-mater the fissures of Rolando correspond to each other perfectly. On the left hemisphere, in front of the anterior marginal convolution, the membranes (arachnoid and pia-mater) presented a very manifest depression. This depression was more apparent after removing the envelopes.

If the anterior part of the brain was viewed, it being raised to the level of the eye, the right parallel frontal fissure was seen to be well marked, and having projecting borders, while on the left the borders were depressed and effaced. At this point the fold passing from the second frontal convolution to the anterior marginal one was very perceptibly atrophied. On measuring with a compass, this fold was only three and one-half millimeters thick, while the one on the opposite side was seven millimeters.

The left anterior marginal convolution had the same volume as that of the right side; it presented only toward the superior third a fold whose volume was not so great as that of the corresponding convolution. The two posterior marginal convolutions were symmetrical and of the same dimensions. The other cerebral convolutions offered nothing unusual. The other parts of the brain were normal in appearance. The arteries at the base of the brain were not atheromatous, and very permeable throughout. The weight of the cerebrum and cerebellum, with the membranes removed, was 1,180 grammes. The two halves of the encephalon had the same weight.

The spinal marrow had its ordinary consistence, but was decreased in volume. This diminution was especially apparent in the lumbar region, where no appreciable enlargement could be noticed. Here the transverse diameter of the cord measured twelve millimeters, the very same as in the dorsal region. The roots and medullary cords did not differ in volume on the right and left sides. The arachnoid, which covered the posterior face of the cord, presented several cartilaginous patches. The right sciatic nerve corresponding to the amputated limb was large, and of a yellowish white color. It terminated in the form of a crook at the extremity of the stump, in the concavity of which were several neuromas.

Commentary: if it is true that the loss of function or arrest of development of a limb produces its atrophy, it is to be supposed that the motor belt of the brain—the seat of movement of the limbs—should be modified as a result of amputation or malformation of the leg and arm. Our case is a new example of partial atrophy, affecting one of the cerebral motor convolutions in consequence of the amputation.

We have found the following analogous cases, which

we give, with names of the authors:

Case of Chuquet. Atrophy of the superior part of the ascending convolution of the paracental lobule of right side in an individual whose left arm was amputated five years ago. (Bulletine de la Societe Anatomique, November 10, 1876.)

Case of H. De Boyer. Atrophy of a cerebral lobe and corresponding marginal convolutions in a man whose thigh was amputated thirty years ago. (*Ibid.* April,

1877.)

Case of Ch. Brun. Crushing of the left leg; amputation of the thigh; death nine months after by purulent infection. No atrophy of the cerebral convolutions.

(Ibid. March, 1877.)

M. Bourdon, in a paper read the 23d of last October at the Academy of Medicine, mentioned three cases of amputation and one of arrest of development of the lower limb. In the three first, which belong to M. Luys, and of which two are unpublished, the atrophy was found seated in the upper part of the ascending frontal convolution.

In the case of arrest of development, taken from M. Landouzy, the atrophy occupies the superior part of the ascending parietal convolution. It is the only case in which the lesion, at all limited, occupied a point near the motor center proposed by Carville and Duret, and by Ferrier for the lower limb. Apart from one of the observations cited by M. Bourdon, and that of M. Brun, all the rest support the theory of atrophy of one of the points of the motor zone of the brain, after an amputation or arrest of development. We can not speak definitely on the case of Bourdon, but that of Brun is, in no wise, opposed to the theory of cerebral localizations.

It should be admitted that the degeneration of the nervous fibers and cells, whether it is established from above downward, as in hemorrhage or softening of the brain, or from below upward, as in an amputation, should occupy a certain space of time. M. Petres (Biological Society, 1877) amputated a limb each of two cats, before these animals had attained their full development, and killed them in twenty-four hours. He found an atrophy of half of the brachial enlargement of the cord, with perfect integrity of the medulla and cerebral hemispheres.

On the other hand, M. Hayem has seen the cells of the anterior horn of the gray matter of the cord alter progressively from below upward, in like manner as the nerves of the amputated limb. We have noticed the same thing in our own pathological specimens. In the case of M. Brun, if the condition of the brain was at all interesting, that of the spinal cord and peripheral nerves was none the less so; but the author does not show their condition.

Besides the time succeeding the operation, which, according to us, is indispensable in producing atrophy of the motor convolutions in the cortical zone, our case shows that the cerebral department, attributed to movements of the lower limbs, is much larger than has been described.

M. Bourdon has already shown that the center of movements of the arm is not located at the exact point heretofore given. It is plain that the same conclusion is allowable for the leg. In our case, amputation of the right thigh was followed by atrophy of the part which unites the second left frontal convolution to the anterior marginal one, while this and the posterior marginal convolutions were left intact.

M. Bourdon says: "In paralysis of the lower limb, contrary to the directions of M. Lucas Championniere, operations should be performed rather in front than behind the fissure of Rolando; because clinical facts go to show that the lesion is oftener in front than behind the line which serves as a landmark to the surgeon."

In these monoplegias, it is well, as M. Lucas Championniere has established, to apply the trephine just over the fissure of Rolando.

We have nothing to say about trephining in front of the fissure of Rolando, but our case proves that when the button of bone is removed from the summit of this fissure, according to the directions of the above mentioned gentleman, the organic troubles are found underneath.—La Tribune Medicale, December 2, 1877.

SELECTIONS.

Prognosis and Treatment of Diphtheria.

DR. LEWIS SMITH, Clinical Professor of Diseases of Children at Bellevue Medical College, observes (American Journal of Medical Sciences, October) that the endemic persistence of this disease in some localities, as New York, and its frequent epidemic outbreaks in country villages and towns, have aroused great attention as to its nature and treatment. No disease also, he adds, stands more in need of all the light which science and experience can throw upon it, not only on account of the divergence of views which prevails respecting it, but because of the frequency with which the prognosis is belied. This uncertainty of prognosis, he believes, depends much upon the fact that diphtheria terminates fatally in several distinct ways; so that while the patient may seem safe with respect to the more manifest and common conditions of danger, a fatal result may still occur from some unseen and unexpected cause.

Death may result from (1) diphtheritic blood poisoning; probably also from (2) septic poisoning produced by absorption from the under surface of decomposing pseudo-membrane—especially when this is extensive, deeply embedded, and attended by an offensive effluvium. Cervical cellulitis and adentis, which may cause very considerable swelling of the neck, appear to be often, if not usually, due to septic absorption from the lower surface, the inflammation extending from the absorbents to the glands and connective tissue. Considerable swelling of the neck, therefore, seldom occurs in diphtheria or scarlatina without manifest symptoms of toxæmia, and is to be regarded as a sign of its presence. (3) Obstructive laryngtis; (4) uræmia; (5) sudden failure of the heart's action, either from the anæmia and general feebleness, from granulo-fatty degeneration of the muscular fibers of the heart, which is liable to occur in all infectious diseases of a malignant type, or from ante-mortem heart-clots. (6) Suddenly developed passive congestion and cedema of the lungs, probably due

to feebleness of the heart's action, or to paralysis of the respiratory muscles. Death may occur from this cause during what seems to be convalescence. The physician is less likely to err who bears in mind the possibility of these various terminations; and Dr. Smith believes that the condition of the urine is too infrequently and too superficially examined, seeing that it often contains a

large quantity of albumen.

"Among the symptoms which render the prognosis unfavorable are repugnance to food, vomiting, pallor, with progressive weakness, and emaciation from the blood-poisoning; a large amount of albumen, with casts in the urine, showing uræmia, to which the vomiting is sometimes, but not always, attributable; a free discharge from the nostrils, or occlusion of them by inflammatory thickening and exudation, showing that a considerable portion of the Schneiderian membrane is involved; hemorrhage from the mouth or nostrils, and obstructed respiration. One, at least, of these has been present in most of the fatal cases which have fallen un-

der my observation."

It is remarkable, Dr. Smith observes, that concerning a disease which has been so long under wide-spread and able observation, such wide discrepancy as to treatment prevails. This has arisen, in part, by the different views taken of the nature of the disease, but still more is due to the unreliability of the statistics of treatment, owing to the very varying types the disease presents even in the same epidemic, so that while some cases resist all measures, others scarcely require treatment at all. He believes that the germ theory of diphtheria has done immense harm by concentrating attention so much on local and general antiseptic treatment, which, as far as his experience goes, proves of little use; and he is of opinion that the fact of the treatise in "Ziemssen's Cyclopædia," which propagates this doctrine, having been published before Sanne's more useful book, has led to great mischief. Experience has, however, brought on a reaction, and practitioners are beginning to learn that constitutional treatment is of as paramount importance in diphtheria as in scarlatina. As the result of his own large experience, he lays down the following propositions: 1. In ordinary cases the poisonous principle of diphtheria enters the blood through the

lungs, and after incubation, varying from a few hours to seven or eight days, gives rise to the symptom of the disease. 2. Facts do not justify the belief that the system can be protected by antiseptic or preservative medicines, given internally. 3. There is no known antidote 'for diphtheria, in the sense in which quinia is an antidote for malarial disease. 4. Diphtheria, like erysipelas, has no fixed duration. It may cease in two or three days or continue for as many weeks, the specific poison acting more intensely at the commencement than at a latter period; so that diphtheritic inflammation—as laryngitis, e. q.—is more severe and dangerous at an early period than when the disease has continued a few days. 5. The indication of treatment is to sustain the patient by the most nutritious diet, tonics and stimulants, employing other measures as adjuvants as the indications arise, the same rules of treatment being for the most part appropriate as are applicable in scarlatina. Local treatment should be unirritating, and designed to prevent putrefactive changes and septic poisoning. Irritants which produce pain lasting more than a few minutes, or which increase the area or degree of redness, are hurtful, and increase the extent and thickness of the pseudo-membranes.

The most nutritious and easily digested food should be given, the preservation of the patient's inclination for food being of vital importance. Beef tea or the expressed juice of meat, milk, with farinaceous substances, etc., should be given every two or three hours, or to the full extent without disturbing digestion. Failure of appetite and refusal of food are justly regarded as most unfavorable signs. In malignant diphtheria or scarlatina patients are allowed sometimes to slumber too long without nutriment. It is the slumber of toxemia, and should be interrupted by feeding at stated times. Stimuli, as observed by Sanne, are indicated in proportion to the gravity of the case; and, while mild cases do well without alcohol, this is required in all cases of a severe type, and should be given in large and frequent doses, wherever pallor or loss of appetite, or of strength and flesh, indicates danger. Of tonics, none answer the purpose better than cinchonidia and quinia. Concerning the doses of the latter, the greatest difference of opinion prevails, according as its

antipyretic or its tonic effects are sought to be obtained. But high febrile action calling for antipyretic doses of three, five or more grains, are seldom observed after the first forty-eight hours, while at a subsequent period the tonic dose or two grains every two or four hours will be found sufficient. Great difference of practice also prevails with respect to iron, some using it exclusively in large doses, while others employ moderate doses as an adjuvant to vegetable tonics. The formula which Dr. Smith prefers, say for a child five years old, is the following: R. Quinia sulph. 3ss., elixir adjuvantis or elixir taraxici co. 3ij. Give one teaspoonful every two or four hours, and one teaspoonful of the following hourly between R. Tinct. ferri chlor. 3ij., pot. chlor. 5ij., syrup 3iv. The tonic effect of the iron is not impaired by the chlorate of potass, which is added on account of its action on the inflamed surface. citrate of iron and ammonia alone, or combined with carbonate of ammonia, may be given in two-grain doses, in syrup, instead of the above, when the inflammation of the fauces has considerably abated or is moderate. As the disease begins to abate, the intervals between the doses may be lengthened, but the tonic should not be entirely discontinued until the patient is far advanced in recovery, on account of the dangerous sequelæ which originate in an impoverished condition of

The object in local treatment should be to reduce the inflammation of the mucous surfaces, and destroy the diphtheritic poison and contagious properties in the pseudo membrane, and to destroy the septic poison and prevent its absorption should any form. Forcible removal of the pseudo-membrane, irritating applications, the use of a sponge or other rough instrument for making the applications, should be avoided as likely to do harm. These should be made with a large camel's hair pencil, or (better for most mixtures employed) with the atomizer. The hand atomizer is very useful, but the constant spray of the steam atomizer is very effectual, and is preferable in some cases. Dr. Smith employs the following mixture: 1. Salicylic acid 3ss., glycerine 3ij., lime-water 3viij. 2. Carbolic acid gtt. xxxij., glycerine 3ij., lime-water 3vj. 3. Carbolic acid gtt. xxxij., chlorate of potash 3iij., glycerine 3iij., water

. 3v. Half a dozen or a dozen compressions of the bulb of the hand atomizer cover the surface of the throat more effectually with the liquid than can be done by several applications of the brush, and it is usually not dreaded by the patient. Diminution in size of the pseudo-membrane under the use of the spray is a favorable sign; but if it do not diminish, its presence can do little harm if properly disinfected. In many cases the spray suffices for local treatment, but this mixture (carbolic acid gtt. viij. liq. ferri subsulph. 3ij.-3iij., glycerine 31.), applied by a large camel's hair pencil, is also very effectual, converting the pseudo-membrane into an inert mass, and putting a stop to all movements of the bacteria which swarm in it. It may be used two or three times a day between the spraying, or oftener without this. Pseudo-membranous laryngitis, the most formidable symptom of diphtheria, is best treated by the spray. Of twenty-five cases treated by Dr. Smith, seven recovered by inhalation of spray and two by tracheotomy. When the Schneiderian membrane is especially affected, being more sensitive than the fauces, it requires a milder treatment. The best consists in injecting into the nostrils, by means of a small syringe, every third or fourth hour, one or two teaspoonfuls of a mixture formed of carbolic acid gtt. xxxiv., glycerine 3ij., and water 3vj., using it of the temperature of the body, the head being thrown back and the eyes covered with a cloth. - Medical Times and Gazette.

Iron in Epilepsy.

In the October issue of the Practitioner, Dr. Gowers adduces strong evidence in favor of the use of iron in many cases of epilepsy, a disease from which the drug has been, perhaps, too rigidly proscribed. In a large number of cases he has found that iron has no recognizable influence upon the affection, one way or another; but there remain others in which it may be employed with temporary and even permanent benefit. In those cases in which its action is transient, there is, at first, a marked diminution in the number and severity of the fits; but if the administration of the metal be pushed, effects which may be regarded as injurious en-

sue, the fits reappearing with all their former severity. However, there are some cases in which its action is direct and permanent-in fact, curative. Such casesthose in which iron does most good—are chiefly those which stand on the border-land between epilepsy and hysteria; but even in some purely epileptic cases iron has been found to have produced permanent results. Dr. Gowers points out that anæmia is no indication for the use of iron in these cases, and suggests that it may have a direct influence upon the nervous system, like zinc, silver and other metals, quite apart from its hæmatinic properties. He supports his opinion by brief notes of a few cases from his out-patient practice at the National Hospital for Paralysis and Epilepsy, guarding himself against drawing too rash conclusions by bearing in mind the sources of fallacy that may arise in testing any therapeutical remedy in epilepsy, such as the natural variation in frequency of the fits, and the influence of the bromide, under which all epileptics are mostly placed. The frequency with which fits increase on withdrawal of the bromide does not allow of any conclusions being drawn as to the efficacy of iron when it is substituted for the latter drug. Iron should then be given in cases where no other treatment has been tried, or if the bromide be taken it should be added to this and the effect noted. Thus, in one case where the bromide had not done much good, the additions of iron caused a cessation of the fits, which, however, recurred after a time. In another case, that of a girl seventeen years of age, who had suffered from several fits daily from the age of three years, the bromide alone caused a diminution in the frequency and severity of the fits. At the end of three months belladonna was added to the bromide, and the fits ceased, and then she took quinine and iron for six months without having any recurrence. A third case, that of a woman forty-eight years of age, the subject of attacks of petit mal, occurring at the catamenial periods, was temporarily cured by the administration of the perchloride of iron. At the end of eighteen months, a recurrence of the attacks was met successfully by the bromide, and an interval of twelve months of freedom gained; a second recurrence took place, and a return to the iron treatment again proved effectual. One other

case may be mentioned from this paper; it was that of a man twenty-three years of age, who for five months had been subject to severe epileptic attacks, mostly nocturnal. He was treated with ten minims of tincture of perchloride of iron three times daily, and continued to take it for six months, and during this time had only two attacks, one in the first and one in the third month of the treatment. After the iron had been left off he remained free from attacks for four months, when the fits recurred, and in three months were "as bad as ever." A return to the perchloride at once produced a freedom from attacks during the time he continued to take it. Two instances of attacks with co-ordinated spasm—lessened or arrested by the use of iron—are also given.—The Lancet.

Acute Rheumatism: Hyperpyrexia: Recovery.

BY T. CLIFFORD ALLBUTT, M. A., M. D., Physician to the General Infirmary, Leeds.

Mr. W., aged about twenty-five, was attacked in August last with acute rheumatism. The disease pursued a favorable course, without heart complication. cylate of soda was administered on Friday, August 10. During apparent improvement the perspiration suddenly ceased; a phenomenon which caused some anxiety to his medical attendant, Mr. Oxley, of Pontefract. On Saturday, Mr. Oxley was still more uneasy on finding that all pain had entirely vanished, the limbs being thrown easily about in bed. The temperature also was found to be two degrees higher than the day before. Salicylate of soda was recommended in considerable and frequent doses; but the temperature continued to rise all that day and during Sunday. On Sunday night there was much delirium, and early on Monday morning a message was dispatched to me. On my arrival at about 9.30 A. M., the patient was lying on his back; his face was deeply flushed, and he tossed his head uneasily from side to side in delirium, or sank into stupor. The delirium and stupor alternated every few minutes. The temperature was now found to be about 107 degrees, and was increasing every hour. Unconsciousness was complete, or nearly so. The pulse was very rapid, and the respirations also, though no accurate note of these symptoms was preserved. There was no visible

swelling or redness of any part.

It was at once decided to place the patient in a cold bath. Unfortunately, the house, a large country residence, had been built before bath-rooms were in fashion, and a row of morning tubs could only be offered. Pontefract was some miles away, and time was pressing. An express was sent off for a full-length bath, and meanwhile an active housemaid discovered an old-fashioned slipper-bath, or rather boot-bath in a garret. This was brought to the bedside, and a row of servants was placed upon the stair-case to pass pails of hot and cold water. The bath was filled with water at 80 degrees, and the patient, a heavy man, was lifted from bed and his legs with difficulty thrust into the foot of the boot, so that he rested in a sitting posture upon a shelf within the heel. The rim of the bath reached the patient's waist. Regardless of floors and ceilings, very cold water was now poured upon the patient's head, who was held up in the bath, and whose temperature was now exceeding 107 degrees. The difficulties of bathing and attention to the temperature of the water diverted the skilled observers from the patient, except so far as observation of the pulse was concerned. In five or six minutes, however, it was seen that he was quite conscious, and he had repeatedly expressed the intense relief afforded to him by the bath. In ten minutes he was joking with his friends, and enjoying himself thoroughly. The water in the bath was so continuously heated by the body of the patient, that it was with difficulty lowered to 70 degrees and to 60 degrees by constant bailing out. With the recovery of the patient's consciousness, the use of the thermometer in the mouth became possible, and it was found that the upward movement of the temperature had been arrested. In this bath, cold affusions being poured continuously over the head and shoulders, the patient remained for forty-five minutes, when the thermometer had fallen slowly to 101.5 degrees. still very comfortable and had no chill. He was now removed to bed, placed in a warm dry blanket, and a bottle put to his feet. His aspect and manner had for some time been perfectly natural, and his pulse and

respirations were scarcely excessive. During the few hours which followed the bath, the temperature slowly fell to the normal. From this time forward, recovery was steady, and may have been aided by a few liberal doses of quinine, given with a view of preventing any renewal of the fever. It is but fair to add that the efforts of the medical men were admirably seconded by a nurse from the Bradford Institution, upon whom much necessarily devolved, and who carefully watched and recorded the temperatures throughout.—British Med. Journal.

Treatment of Dissevered Fingers with Carbolized Collodion.

Dr. Karl Franz, in the Memorabilien, says that he recently had a case in which a horse had bitten a coachman's finger, severing the third joint so that the portion of finger was barely hanging by the epidermis, one millimeter in width, and that he feared to touch it lest it should drop off. The wound was washed with cold water, and then carbolized water; the edges were brought in close apposition and thoroughly varnished over with a ten per cent. solution of carbolic acid in collodion. Afterward the entire finger was bound up in a pasteboard splint and cotton. The wound gave him

no pain.

Twenty-four hours after this the end of the finger was examined. It was pale, and pricking with a pin was not felt. It remained in this condition twenty four hours, and then I took off the bandage and washed the finger, and found that the parts had adhered very well. Upon pressure with a pin the end of the finger changed its color from an already somewhat reddish to a pale hue, which, upon cessation of the pressure, again became reddened, as is observed in a healthy person. It was evident the circulation had been re-established, but sensation had only partially returned on the ninth day. By the twelfth day the finger was sensitive to the end of it, but motion was not yet possible. By the twentyfirst day feeling had returned to all parts of the finger, and the man could use it a little, and strong pressure did not give him pain.

The length of time Dr. F. leaves the above dressing

on is from four to eight days, if the patient remains satisfied.

Another case, almost similar to the above, is narrated, with a good result, in which the patient's little finger was cut off, with the exception of a shred of skin.

Also a case is reported where a miner had received a burn of the entire face, hands, and forearms, and both feet to the middle of the thighs. The burns were of the first and second degree. The carbolized collodion was tried on his face. The varnish caused the patient no pain at all. On the contrary, the evaporation of the ether cooled the burning sensation. The swelling of the face, which, in burns of a similar character, occurs to so great an extent that the victim can scarcely be recognized, was here very insignificant, and only continued a short time. The painting was repeated once, and the face was left uncovered. Over the other burns I placed lint saturated with ol. oliv., with aq. calcis and a ten per cent. solution of acid carbol., the result being very good.—Am. Practitioner.

Homœopathic Vagaries.

WE take the following from a homeopathic journal for the amusement of our readers. It is an editorial from the California Medical Times.—Editor Medical News.

"The discovery of the law, similia similibus curantur, with its peculiar pathology and therapeutics, revealed the fact that both pain and sleeplessness are symptoms of disease, and enter largely into the sum total of symptoms

which indicate the disease and the remedy.

"Homoeopathy, therefore, protests against the administration of opium, or any of its preparations, in sufficient quantities to produce narcotism and sleep, except, perhaps, in cases where there is no hope of recovery. It says there is no display of scientific medical skill in the administration of a drug that stupefies a patient to a degree that he is insensible to pain and sleeps.

"Pain and sleeplessness are both blessings in disguise, for they give warning of dangerous and destructive processes going on, or of lesions either complete or progressive. If pain causes sleeplessness, there is also a cause for the pain. It therefore follows that when the cause of the pain is removed, the pain will cease, and sleep will follow as a natural sequence. Nervousness causes wakefulness, but there is always a cause for nervousness. Remove the cause, and the effects cease.

Objection is often made that explaining the principles which govern or go to make up disease is like explaining the phenomenon of gravitation. True, yet in either case, for practical purposes, an understanding of the laws that govern them is equivalent to an understanding of the phenomena themselves.

Sleeplessness is never found as an abstract symptom of uniform character, but is always associated with other symptoms, and is largely varied in its character. character of the sleeplessness will very often determine

the remedy that will cure the primary affection.

A few cases will illustrate:

A patient is found suffering from a high fever; face flushed; eves red, and can not bear the light; headache of a pulsating character; tongue red; throat sore, and very red; is delirious and raving; can not sleep. Opium is not given, but bell. soon restores the patient, and re-

freshing sleep ensues.

A physician is called to see a child suffering from marasmus. Its skin is of a dirty yellow color, is wrinkled, and seems to hang loosely over its emaciated limbs and body. It eats large quantities of food, but still it grows thin. It is feverish and fretful, and keeps everybody awake at night. A few doses of cal. carb. not only cures the marasmus, but makes the child sleep sweetly all night.

A homoeopathic physician calls upon a patient that has had or now has a violent, wasting diarrhoea. The face is pale, eyes sunken, burning pains in stomach and bowels, intense thirst, terrible restlessness, constantly turning in bed, and can not sleep. The physician does not give morphine, or any other narcotic or sedative, but gives arsen. All the aforesaid symptoms not only improve immediately, but the patient falls into a sweet, refreshing sleep.

He is called to see a patient that has been exposed to cold. A violent fever supervenes. There is great anguish, intense thirst, constant restlesness, and can not sleep. Aconite relieves the symptoms, and the patient

sleeps sweetly.

A hysterical lady is extremely nervous, fretful, sad and sighing; is inclined to solitude, and weeps easily. She is so troubled with nervous twitching that she can not sleep. A few doses of *ignatia* removes the hysterical symptoms; the sleep is natural and refreshing.

A patient is exceedingly sensitive and excitable. All the senses are acute. Ideas flow thick and fast, and there is a kind of exalted ecstasy, so that sleep is impossible. A dose of coff. crude will allay the nervous excitability,

and the patient will sleep.

A patient is stupid and drowsy, but starts as soon as he falls asleep, cries out or screams suddenly, starts up, turns over, and lies down again. A dose of hyose, produces

quiet repose and sleep.

A patient has stupid sleep, with snoring, and frightful dreams before midnight, then awakens, and is kept awake by the ticking of the clock, singing crickets, barking of dogs, or solemn distant sounds of any kind. It seems as though morning would never come. A dose or two of opium sets everything "to rights," and the patient sleeps sweetly.

Feeding by the Rectum.

Dr. Austin Flint, in a paper of extraordinary interest and practical value in the American Practitioner of January, on rectal alimentation, shows that life may not only be thus prolonged a few days, but that persons may live for weeks and months and even years by this method of nutrition alone. More than this, and it seems almost ludicrous, some patients having been fed in this way for a considerable period were quite disinclined to return to the usual mode of eating. The cases recorded, except the first, came under Dr. Flint's observation. Dr. Pierce's patient lived three weeks solely nourished by the rectum. Dr. Purple's patient lived three months on this form of feeding. Dr. Lusk's patient was sustained for seventeen days in the same way. Dr. McClain's patient maintained life by rectal alimentation for twenty-eight days, and for a year was fed in this way the greater part of the time. Dr. Flint's patient lived exclusively upon injections of

essence of beef and milk, repeated every four hours for three weeks. The most extraordinary case is that furnished by Dr. Bliss, of New York. His patient lived comfortably for fifteen months without other sustenance than that through the anus, and for much of the time for five years lived by this means. None of these patients died of inanition, and some of them increased in weight and strength. Where death occurred, it was due to the disease with which the patient was suffering.

This treatment is applicable in cancer or ulcer of the stomach; stricture of the esophagus; gastritis; gastrorrhagia; the persistent irritability of the stomach, purely functional, occurring in women; invincible anorexia with loss of strength and weight; and when "from blunted mental perceptions or coma an adequate amount of food can not be introduced into the stomach by voluntary deg-

lutition."

The rectal diet recommended is as follows: Liebig's extract of meat, with milk; milk either alone or combined with eggs, beef, mutton and chicken broths; and Leub's pancreatic meat emulsion, which is prepared as follows: from five to ten ounces of finely-chopped meat, and one-third of this weight of finely-chopped pig or ox pancreas, free from fat, are mixed with five ounces of lukewarm water. This mixture is rubbed in a mortar to the consistency of thick soup.

The quantity of food injected should be from three to six ounces, and the intervals between injections should be from three to six hours. If not well tolerated, tincture of opium or morphia in solution are added with advantage. The bowel should be relieved of its fecal contents before beginning the rectal feeding, by simple enemas, or, if not contra-indicated, by a laxative per orem. After this procedure no fecal discharge may occur for days or weeks,

and yet no discomfort is experienced.

To quench thirst simple water is injected, and the body is freely sponged. Should the rectum refuse the first injections of aliment, they should be continued, and in a short time are likely to be retained. Should the bowel become intolerant of the injections after they have been used some time, they should be discontinued for a day or two, and after this rest the rectum is likely to receive them kindly.

The nutritive injections should be tepid, and directly

after their administration firm pressure on the anus by a sponge or napkin should be made until the desire of expulsion passes off.—Louisville Medical News.

The Pathology of Inflammation.

THE most conspicuous opponent of Cohnheim's theory, that the origin of puscells is to be sought exclusively in the white corpuscles of the blood, is Prof. Stricker, from whose laboratory there have come of late years a number of valuable contributions to pathological histology, bearing directly on this subject. The object of most of these papers has been to show that in an inflamed tissue there is a rapid formation of cells from those pre-existing in the part, in circumstances and under forms that exclude the possibility of the new cells being white blood-corpuscles. A recent memoir by Arnold Spina, Assistant in the Laboratory for General and Experimental Pathology in Vienna, on "The Changes in the Cells in Inflamed Tendon" (Wiener Medizin, Jahrbucher, 1877), may be regarded as a continuation of the series of experimental studies on inflammation which have been inspired by the ideas of the Vienna school.

It is a misfortune that histologists are so little agreed as to the nature of the cellular elements of connective tissue, that the conclusions at which any observer arrives. regarding the changes produced by inflammation, must always be read in the light of the opinions he holds regarding the normal structure. This is not less the case with tendon than with other forms of the tissue. Spina, therefore, very properly prefaces his memoir with a statement of his views on the histology of tendon. They are briefly as follows: Between the bundles of tendon there are interspersed rows of cells. The rows are spindle-shaped, the cells becoming narrower toward the ends of the spindle, until the cells disappear, the spindle being continued by fibers from each extremity. These rows become, as the animal gets older, changed into elastic bands. The cells of which these rows are composed are in young animals surrounded by a hyaline substance from which the elastic tissue is formed. The cells of tendon, further, have processes, in the form of flattened bands and fibers, by which they are connected with each other.

Now what takes place in these elements when the tendon is inflamed? In the tendons of young animals, cauterized by caustic potash, cut out after twenty-four hours and colored by chloride of gold, the cells were found enlarged, and their number increased; the cell-processes were found to be thicker and in greater number. Similar changes were found, even in a more striking manner, in the tendons of older animals; the presence of nodular swellings in the band-shaped processes of the cells being conspicuous. Now spindle-shaped rows of cells are formed, and it is inferred that they are the product of the nod-·ular swellings in the processes of the older cells, these swellings being clumps of protoplasm (Klumpen), which by blending with each other form a new chain of cells. When the inflammation has lasted longer than forty-eight hours, the substance, of which the bundles are formed, gradually disappears, while the cells increase in number more and more until large layers and masses of cells are formed. After three or more days, the individual cells can no longer be distinguished, and the cell-groups have been succeeded by a coarsely or finely granular mass. This granular mass, when stained by hæmatoxylin, is seen to contain the nuclear elements which are peculiar to puscorpuscles, and the mass itself is in reality a small abscess. When these cellular masses were teased out after two or three days' inflammation, an important change was found to have taken place in the spindle-shaped cell-rows described by Herr Spina in healthy tendon. These could now be isolated, and were found to be much longer than in the normal condition. Instead of being one cell broad, two and even more cells were now found side by side. The elastic bands developed from the cells had gone back into their histological elements, and become "pus-bands." At other times, according to Herr Spina, the cellular elements of these elastic bands developed red blood-corpuscles, color being apparently the chief element taken into consideration in coming to this conclusion. These bloodlike cells are also found at some parts in a breadth of several cells, contrasting again with the appearances seen in healthy tendon.

It would thus seem to be beyond doubt, that, if we follow Herr Spina's method of examining tendon, and possibly whatever method may be followed, we shall find, in a very early stage of inflammation, a greater number of cells

than will be found in healthy tendon similarly treated. Is Herr Spina's conclusion that the healthy cells have multiplied under the stimulus of inflammation, therefore. justified? To answer this question it is necessary to consider an interesting point in histological technique. The bundles of tendon, being somewhat cylindrical in form and parallel to each other, necessarily leave, at certain points between them, when they are cut transversely, angular gaps. It is in these gaps that the nuclei of the tendoncells are seen, and it has been conclusively shown by Boll that the cells lie on the bundles. When a transverse section of tendon, treated by gold-chloride, is examined, these gaps are filled with a dark purple mass, which insinuates itself in angular projections between the bundles. Herr Spina, whose preparations were mostly obtained by the use of this reagent, believes that this angular and occasionally anastomosing deposit is the tendon-cell, an opinion that is irreconcilable with the results obtained by Boll and Ranvier. When an inflamed tendon has been treated with gold, this deposit between the bundles is increased in quantity, and the bundles are proportionately separated from each other. There are, further, an increased number of gold-stained lines traceable between and into the bundles. Histologists, who do not agree with Spina's views regarding the nature of the tendon-cell, will not see with him in these changes any evidence of growth or multiplication of cells, but will regard them as evidences of distension of the spaces between the bundles by serous effusion. When, after a longer duration of the inflammatory process, the large spaces between the broken-down bundles are found occupied with pus-cells, an objector to Herr Spina's views would naturally ask why their source should not be sought in the blood-vessels that exist in the tissue between the groups of bundles. The important fact, however, remains, than an increased number of cells are actually found in the inflamed tissue, and it has not been shown that they are connected either with the gold network between the bundles, or with emigrated white blood-corpuscles. In isolated cell-bands, several breadths of cells were found side by side. Neither from the description given by the author, nor from an examination of the plate which illustrates his memoir, does it seem probable that these were white corpuscles in a particular stage of development, and as little is there evidence that they proceeded from each other by any process of division or endogenous cell-foundation. The demonstration of their existence, will, we believe, be found to be an element of permanent value in Herr Spina's work; but, before pathologists can be expected to agree regarding their nature, the whole question of the histology of tendon must be re-examined from the foundation.—British Med. Journal.

Symptoms Produced by Hemorrhage into the Corpus Striatum.

In the first place, we will study the effect produced by hemorrhage in that part of the brain, for hemorrhage into the corpus striatum is by far more frequent than hemorrhage in other parts of the brain. There is no part, except, perhaps, the optic thalamus, in which hemorrhage occurs more frequently than into the corpus striatum. There is another exception, yet it can scarcely be called such, and that is hemorrhage between the corpus striatum and the optic thalamus; there are several such cases. The occurrence of miliary aneurism, described by Charcot, is extremely common in the blood-vessels in these two ganglia, and also in the blood-vessels between them, and it is this fact, probably, which accounts for the frequent occurrence of hemorrhage in those parts. If you have to deal, therefore, with a case of paralysis upon one side of the body with symptoms intimating the occurrence of hemorrhage in the brain, there is a great probability that it has taken place in the corpus striatum, or in its immediate neighborhood. But there are other ways of making a diagnosis: The symptoms previously mentioned and dependent upon paralysis of the third pair of nerves; the existence of amaurosis and disordered movement, the patient showing either a tendency to turn around or to go forward or backward. All these symptoms are by far less frequent, however, when the disease exists in the corpus striatum; vomiting may be present, but occurs less frequently, and also hyperæsthesia, which occurs very frequently with disease in the base of the brain, will be absent in almost every instance of disease in the corpus striatum. So that by passing in review all the symptoms which you know to be very frequent, when disease is in

the base of the brain, and knowing that disease in the corpus striatum does not usually produce them, you will be able to arrive at a reasonable conclusion that the disease is in that part. If you add that the patient has had no convulsion, you will have another reason for locating the lesion in the corpus striatum, and this leads me at once to speak of the symptoms accompanying disease in the optic thalamus, for they differ immensely from those which accompany disease in the corpus striatum.

On the Elimination of Mercury.

DR. E. W. HAMBURGER, of Franzensbad, sums up a paper in the Prager Medicin. Wochenschrift, 1877, with the

following conclusions:

1. Mercury can be distinctly found in the urine of patients who have been treated with mercurial suppositories for some time. In one case in which the treatment had been commenced four days previously, mercury was not found in the urine. Mercury is always present in the urine of patients who have been treated by inunction.

2. In patients treated by suppositories, mercury was always found in the milk as well as the urine. In cases of inunction, although mercury was present in the urine, none could be found in the milk; and, when mercurial inunction was substituted for suppositories, the mercury disappeared from the milk, although it continued to be present in the urine.

3. The feces of a patient, who was treated by inunction, contained a large amount of mercury. Dr. Hamburger concludes hence that the elimination of mercury

takes place chiefly by the bile.

The chemical process used consisted in the removal of organic matters, the application of electrolysis, and the formation of iodide of mercury, the crystals of which were readily recognizable under the microscope.—London Med. Record.

Subcutaneous Injections of Chloroform.

In a note addressed to the Societe de Therapeutique (Gaz. des Hop., December 14), M. E. Besnier details the results of numerous trials which he has made at the St.

Louis of the hypodermic injection of chloroform, first practiced by Dr. Roberts Bartholow in 1874. been, he observed, but little published upon the subject, probably because these injections have been used only for a limited purpose (the treatment of neuralgia), instead of employing them for the relief of every kind of pain. Their great advantage, he considers, consists in the fact that they may be employed in this manner, and thus supersede morphia with its consequent inconveniences. No ill effect whatever, local or general, follows these injections, and yet they are efficacious. But the mode in which they are made is of importance, for inefficiently performed (which is very commonly the case) they may give rise to local phlegmasia. They should always be practiced in two stages, the needle being first separated and introduced alone, so that if it happen to penetrate a vein this may be made known by the issue of a droplet of blood. When the syringe has been reapplied, in order to prevent local irritation being caused, the injection should be propelled into the hypodermis (i. e., the subcutaneous cellulo-adipose layer, which varies in thickness in different regions and individuals), which not only possesses a special tolerance and insensibility, but a very active absorbent power. If the point of the needle be very fine and sharp, it may be passed through the skin into this tissue without appreciable pain, which, however, will be felt if it be carried too far, so as to reach the muscles, etc. The needle is maneuvered with the greatest facility as soon as it has passed the dermis, its point being easily guided to any part of the hypoderm. This done, the syringe may be adapted, and the injection made with the greatest security .- Med. Times and Gaz.

Population of India.

A DOCUMENT of statistics pertaining to India, presented to Parliament, has just been published. The territory under British administration comprises 909, 834 square miles, with a population of 191,065,445 inhabitants. The original States comprise 573.052 square miles, with a population of 48,233,978 inhabitants. By adding the French and Portuguese possessions, the sum total of India is 1,484,150 square miles, with a population of 239,978,595 inhabitants.

Of the 191,000,000 British subjects in India, their religion is divided as follows: Hindoos 139,343,820, Sikhs 1,174,436, Mohammedans 40,867,125, Buddhists 2.832,851, Christians 897,682; others, whose religion is not known, 5,949,531.—

Progris Medical, 5th year, No. 52.

MICROSCOPY.

Staining Fluids for Microscopic Work.

BY M. N. MILLER, M. D.,

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INQUIRY is so frequently made regarding the staining processes employed in the histological laboratory of the New York University, that I am induced to communicate the following as among the most valuable. The necessary materials are within the reach of every student, and no

delicate weights or measures are needed.

I. Borax Carmine.—The original process given by Theirch for the preparation of this most valuable agent is complicated and troublesome. The method, which originated with Prof. J. W. S. Arnold, of this college, gives excellent results, and is simple in the extreme. A saturated solution of ordinary borax in water is first prepared. It is best to nearly fill, say a pint wide-mouth bottle with water, adding the borax, in coarse powder, to excess-allowing some of the crystals to remain undissolved. If good "No. 40" carmine be now added to the solution, it is immediately dissolved, and a beautiful scarlet fluid results. Continue the addition of the carmine until, after frequent agitation, it no longer dissolves, and a small portion remains at the bottom of the bottle mingled with the crystals of borax. After standing for twenty-four hours the clear supernatant can be decanted. To this clear portion add about fail, of alcohol, and fai. of the U.S. P. solution of caustic soda, and it is ready for The method employed by Prof. Arnold, which is in use in this laboratory, is to omit the alcohol, and evaporate the liquid to dryness, powdering the red amorphous mass thus obtained. This powder will keep for years, and when a staining fluid is required, it is only necessary

to place from ten to fifteen grains in an ounce of water, to which about f 3i, of alcohol is added.

This compound will stain tissues that have been hardened in bichromate or alcohol, and is almost invaluable

in pathological study.

II. Hæmatoxylin.—The expensiveness of this substance has led to several processes for using the logwood chips or extract. I have devised the following, which for results leaves nothing to be desired, and I believe it possesses merit in the simplicity of preparation, at least.

Take a pint bottle, as in the former process, fill with water, and add about an ounce of common extract of logwood, in coarse powder. Allow this to remain in a warm place for twenty-four hours, with occasional stirring. After the expiration of this time add powdered commercial alum until the liquid changes from the muddy-brown color given by the logwood to a brilliant purple. alum must be added until no change is produced. excess of the salt will do no harm. Add about f3ij. of alcohol, and, after decanting or filtering, it is ready for use. We usually omit the alcohol at this stage, and evaporate to dryness, as in the borax carmine process. The powder thus obtained is added to water when required. Three grains to the ounce of water will give a fluid which will stain alcohol-hardened tissues in from ten to fifteen minutes. A solution containing ten grains to the ounce will stain very quickly. If it is desired to keep the solution, add f3i. of alcohol to each ounce.

III. Picro-Carmine.—Ranvier gives an exceedingly troublesome process for obtaining this complex substance, and it has frequently failed with myself, as it is difficult to ascertain when the solution becomes neutral. I have never had any but successful results with my process, which consists merely in adding one part of a saturated solution of picric acid to two parts of the fifteen-grain borax-carmine solution. I believe this mixture will keep indefinitely, although I have never kept it longer than six months. I now have a sample that was made early in the past summer, and it is still perfectly good. A section of skin is one of the most beautiful objects prepared with the picro-carmine, as the epithelium of the glands and the muscles are stained yellow, while the nuclei of the cells and the connective tissue acquire the carmine

color. It is not, however, well adapted to tissues hardened in chromic acid.

Sections, after having been stained in the borax-carmine, should be washed in alcohol to remove the superfluous coloring fluid, transferred for a few moments to a saturated solution of oxalic acid in alcohol, to fix the color. The oxalic acid is then washed out in alcohol, when the sections are cleared up in oil of cloves, and mounted in balsam or dammar. If it is desired to mount in glycerine—which, by the way, meets with very little favor here as a universal medium—the oxalic gas can be washed out with water, instead of alcohol.

Hæmatoxylin stainings are soaked in water for a few moments—to wash out the alum—transferred to alcohol, clarified in the clove oil, and mounted in Canada balsam, or dammar varnish. Especial care must be taken that the vessels employed be clean, and that no acid comes in contact with the sections. If the fluid becomes muddy, or a scum forms upon the surface, it is only necessary to filter.

Sections must remain in the picro-carmine generally for about twenty-four hours. They are then washed quickly first in water and then in alcohol, after which transfer to the oil of cloves. The sections having been transferred to the slide, and the superfluous oil removed, the balsam or dammar (preferably the latter) is added, and the cover applied.

I have not directed the use of distilled water in making the solutions, as it is not essential. With us the "Croton" answers every purpose, as the solutions are all either fil-

tered or decanted .- Med. Recorder.

Tolles' One-Sixth of an Inch Objective (Duplex Front).

DR. R. B. DAVY, of this city, has kindly translated for us the following description of Mr. Tolles' one-sixth of an inch objective, from the *Journal de Micrographie*, by the editor, Dr. J. Pelletan:

"We have very recently received from Mr. R. B. Tolles, of Boston, an objective, one-sixth of an inch (duplex), of 180° of aperture in the air. The name of the celebrated American maker is too well-known to-day to allow us to pass without mentioning here this magnificent instru-

ument, and if not to give a technical and complete description of it, which would only be interesting to professional opticians, at least to expose briefly the results it has furnished, and to set forth our opinion on its value.

"It is an immersion objective, but can also be used dry by raising the correction to the neighborhood of zero of the collar. The correction can give two and two-thirds turns by an extremely delicate movement, but not so easy as to cause it to lose precision. The collar is divided into twelve parts, and each part into two halves; besides, there is no more than in the objectives of Powell and Lealand, Hartnack and Prazmowski, nor of Zeiss, of the vertical piece rising and falling in a groove in order to make a movable index on the tube. The correction is operated by the movement of the two last lenses.

"The objective has four lenses; that is, the front one is double, whence name of duplex given by the maker. The mechanism is perfect, and presents the character of strength without heaviness. The finish and workmanship is equal to that of the famous one-eighth of Powell and Lealand, and of the most beautiful one-tenth of Hartnack and Prazmowski. As far as the optical results are concerned it is superb, and of a nature to confirm us in our opinion on the value of large angle of aperture, especially

for histological observations.

"We have tried the objective with the light of cloudy days such as we have had for some time at Paris, and with an oil-lamp moderator without any kind of condenser, using simple central and oblique illumination, and we have resolved with the greatest facility all the diatoms ordinarily used as test objects. We will give in detail in the next number the results obtained on each of these tests, which we can not do at present from want of time and space.

"Very short oculars can be employed (C, D and E of English microscopes, which correspond to 4, 5 and 6 of Hartnack) without sensibly injuring the accuracy of the

vision.

"Moreover, we have commenced by examining histological preparations—work whose results have filled us full of enthusiasm, using the objective dry. The precision obtained on all preparations, diatoms and others, is admirable, the achromatism excellent, the images of marvelous delicacy. The field of vision is astonishingly limpid—an absolute plane, whose borders give images as distinct as the center. Let us add that the frontal distance is good, in the dry as in immersion, and makes of this objective an instrument which can be applied quite ordinarily to all kinds of work.

"The correction, moreover, is exceedingly true. We wish to express by that that an optical effect corresponds to each movement of the collar—in other words, it is known that in a great many objectives correction of the image goes sometimes by starts, and often does not appear to respond to all the movements of the collar.

"We will have occasion to return again and again, in our work apropos to microscopes and foreign objectives, to this magnificent system, when we shall have studied it completely and compared it with the justly celebrated one-eighth of Powell and Lealand and one-eighth and one-tenth of Hartnack and Prazmowski, which were up to this day the most beautiful optical specimens known to us. For the present we can affirm that the one-sixth of Tolles is certainly equal to them. Perhaps, with a comparative study closely followed, and all other things equal, we will find it superior. At all hazards we are certain of one thing, that this objective is considerably superior to all those of the same power that we are acquainted with."

Microscopy of Dust.

December 13, 1876—Weather Cold.—A dry slip of glass lying on the table for several days becomes covered over with thick dust. This dust, under the microscope, presents the following appearances:

In the field will be seen small bodies and masses of

matter varying greatly in size and appearance.

Some of the largest discoids have a dark zone, with sharp, intensely green center, oval in shape, presenting the appearance of a genuine nucleated disk, having smooth border rather larger than blood corpuscles.

All masses much larger than these are more or less irregular in shape and size, without any neucleated center.

As the sizes diminish below the first mentioned, they all retain the globular form, with the sharp green center, disk less dark, and center less ovoid apparently.

As the sizes diminish, after passing below the one-tenth thousandth of an inch in diameter, the atoms present the same aspect as the last, only the center nucleus more spherical and disk less dark. Very fine, comparatively, run much below the last-named figure; some run down much smaller—perhaps we might say to the one-fortieth thousandth of an inch, which may be put as the limit.

Now, subject the slide to the blaze of a spirit lamp until red hot, or nearly so, and again put it under the lens. This time nearly everything will be seen as before, without an appreciable change, only the larger disks are less numerous and more of a brown color. None less than blood corpuscles in size have changed, or disappeared out of the field, which, to any reflecting mind, leads to the conclusion that only a few of the larger disks are of organic origin. No other conclusion can reasonably be arrived at.

A one-fifth objective is a good power for the experiment.

S. P. Cutter, M. D., Memphis, Tenn.

GLEANINGS.

THE CREDIT SIDE OF THE INSECT-ACCOUNT.—Chemical and medical science has not succeeded in finding any vesicating agent that can perfectly replace Spanish flies. It may be added, in illustration of their extensive use and their commercial importance, that twelve tons of them have been shipped in a single year from the island of Sicily alone.

The cochineal insect is another of no slight industrial value, though the coal-tar colors in these latter days have largely superseded it as a dye-stuff. It still, however, furnishes the pharmacist with coloring-matter for

his tinctures.

Nutgalls afford another illustration of the uses of insects in the arts and in medicine. Enormous quantities are consumed in dyeing and the manufacture of inks. Gallic and pyrogallic acids are indispensable to the photographer. The annual yield of galls, in Persia alone, averages more than two thousand tons, and that of Turkey is about the same.

On our debt to the bee for honey and wax it is unnec-

essary to enlarge, and what we owe to the silk-worm is equally familiar. Silk, indeed, is one of those unique products for which no adequate substitute has ever been found. It is also one for which the demand is constant from year to year, and from century to century. Silk has been a popular fabric from ancient times, and is likely to remain independent of the caprices and mutations of fashion. The cast-off shroud of a worm will continue to be, as for ages it has been, the favorite material for the dress of women and for many purposes of household adornment.

Even the husbandman can allow something to be credited to these creatures which cause him so much labor and loss. Insects have many enemies among their own kindred, and the multiplication of some species is kept within proper limits by the hostility of others. The ichneumon flies, the lace-winged flies, and the lady-bugs, are thus good friends to the farmer and the gardener.

Symptoms of Disease in the Optic Thalami.—Disease in the optic thalamus very frequently indeed produces convulsions. The optic thalamus is perfectly able to produce paralysis, and this is an important point against the views so universally admitted by physiologists and physicians. For, the optic thalamus has not been considered by any one as being the seat of the will power for any voluntary movements; and yet hemiplegia, or other kind of paralysis, appears just as frequently from disease in the optic thalamus as from disease in the corpus striatum. We have here again a very clear reason against admitting that paralysis is developed in cases of brain disease because of destruction of nerve-centers in any part of the organ.

The paralysis caused by disease in the optic thalamus has features which are most interesting. There is almost always, in cases of disease in the optic thalamus, change in the reflex faculty. In the paralyzed limbs, or if but slightly paralyzed, reflex irritation disappears or is very much diminished, or just the reverse may be present; that is, considerable increase of reflex movements.

Another important feature is frequent paralysis of blood-vessels upon the opposite side of the body, when there is disease in the optic thalamus. Not that I con-

sider the optic thalamus as the center for the vaso-motor system, but the fact exists, and is important for diagnosis.

This is the reverse of what you very frequently find in cases of disease of the pons varolii. In disease of the pons varolii, very frequently, the limbs upon the opposite side of the body are extremely cold, and it requires considerable destruction of the pons for the reverse to be observed. In disease of the pons varolii, instead of having paralysis of the vaso-motor system, there is excitation and consequent contraction of the blood vessels and diminution of temperature on the side of the body affected.

The optic thalamusis certainly a most interesting organ to study, and I wish I could dwell at length upon its significance in disease.

But there are other features which are extremely remarkable. The optic thalamus, although it is not the center for vision, is very frequently, when diseased, the cause of amaurosis. Still more, it is frequently the cause of loss of all the senses upon one side, and almost always, but not always, as there are exceptional cases, the loss of senses is upon the opposite side. The optic thalamus acts much in the same manner as the trigeminus nerve. know it was shown long ago by Magendie that, when the trigeminus nerve is divided, there is a loss of the special senses upon the corresponding side. The action of the thalamus differs from that of the trigeminus, but it resembles it inasmuch as there has been observed alteration of nutrition and change in structure of the eye similar to that caused when there is disease of the trigeminus. This change in structure of the eye has been observed in two cases in which there was disease in the optic thalamus to my knowledge, and probably there are more upon record.

The optic thalamus, or at least a part in that neighborhood, has been considered by many physiologists as the center for perception or sensation. This is absolutely wrong, and some of the more recent observers have given up that view. I will say, as regards the pretended passage of these fibers, conveying sensitive impressions, that those fibers which go from this part to the posterior lobes of the brain, are, almost every day, found destroyed without producing anæthesia at all. So if these are facts

which seem to show that there are fibers, passing through the internal capsule, which serve to convey sensitive impressions, the destruction of those fibers does not produce phenomena which are in harmony with the requirements of the theory.

PARALYSIS PRODUCED BY LESIONS IN THE CENTRUM OVALE .-I now pass to other parts of the brain, and let us first study the effects produced by lesions in the radiating white fibers which go to make up the centrum ovale, or the white matter of the cerebral lobes. Those parts can produce paralysis, and the paralysis produced by lesion there can be just as great as paralysis produced by lesion in any other part of the brain. A lesion occupying the most distant parts of the brain, either in the posterior, the middle, or the anterior lobes, can produce paralysis. There is in that fact evidence 'quite clear and quite abundant against the view which I am fighting. We find that disease in any part of the centrum ovale can produce complete paralysis upon the opposite side of the body. If that alteration is limited in the posterior, the middle, or the anterior lobe, how can it be that all the voluntary motor fibers are destroyed in such a limited part of the brain? This certainly can not be admitted. When the disease is located only in a small part of the white matter of the brain, we can not reconcile the fact which follows with the requirements of the theory. There should be only a simple localized paralysis-a slight degree of paralysis; but, on the contrary, we find that complete hemiplegia occurs, which is persistent from disease in those parts. The reverse also is found, and an entire, or almost entire, hemisphere has been destroyed without producing any marked paralysis. In collecting facts we have found a series which show that either paralysis or convulsions may exist either upon the corresponding side or upon the opposite side. The paralysis exists almost always upon the opposite side; in some cases, perhaps one out of three hundred, it will be found upon the same side. Not so, however, with convulsions, for when the white substance of the brain is diseased, you will find them upon the corresponding almost as frequently as upon the opposite side. It is due to irritation only that such convulsions are present.—Brown-Sequard, in Med. Record.

THE MEDICO-LEGAL INVESTIGATION OF SPERMATAZOA.—"Certain vegetable fibrillæ, particularly those of hemp, contain in their interior, certain ovoid granulations, slightly flattened in their longest diameter, and very refractive, which precisely resemble, in dimensions, aspect and form, the so-called head of the anamalcule. These granules become free as soon as the cellules are destroyed, and are dispersed in the liquid where the debris of the material is floating."

Longuet accordingly has searched for a coloring matter which, by its elective action, would permit one to distinguish between the animalculæ and the vegetable detritus; and, after numerous essays, he succeeded with ammoniacal carmine, such as the histologists use. The spermatazooids behave differently in the presence of the carmine, according as they are fresh, or old and dry. When recent they are very slightly changed; when old they fix the color with great intensity, more particularly in the large extremity, the so-called "tail" remaining uncolored. This singular property suffices for their immediate recognition, even when they are surrounded by foreign elements which affect analogous forms.

The author advises as follows:

1. Take a small square of the material, supposed to be stained with semen, cut as nearly as possible from the center of the stain.

2. Plunge the little square of material into a small quantity of distilled water, colored by a few drops of an ammoniacal solution of carmine (five or six drops to five grammes of water).

3. Leave this to macerate for thirty-six or forty-eight hours, and even more, for no inconvenience will result.

4. Separate the threads of the material very carefully, thread by thread, and fiber by fiber.

5. Isolate each separate fiber.

6. Examine each separately by the microscope, with an enlargement of 500 diameters, each morsel being placed

in a drop of ordinary glycerine.

In a preparation thus made, clusters of spermatazooids will be seen for the most part entire, "the head" colored a light red, "the tail," without tint, disseminated among non-colored vegetable fibrillæ of perfect refraction.

The advantge of this method lies in the fact that the results are most decisive according as the stain is old-

that is, under the most unfavorable circumstances, for nothing is more easy than the isolation and recognition of spermatazooids in recent stains.

INJURY RESULTING FROM ELECTRICAL TREATMENT, - Dr. Lincoln reports some interesting cases, in which the application of electricity gave rise to unpleasant consequences. In a case of rheumatic arthritis, the usual galvanic treatment at first relieved the pain, and imparted a sense of vigor to the body. After the first two or three weeks, however, the benefit became less marked, and soon an acute attack, or exacerbation of the disease set in, which Dr. Lincoln thinks might reasonably be attributed to the treatment. In a case of spinal exhaustion, galvanization induced restlessness and sleeplessness, from which the patient had never suffered previously, and which continued to trouble him as long as he received electrical treatment, without being balanced by any good results whatever. A case of muscular rheumatism was very rapidly improved, but this improvement was followed by severe dyspepsia and great prostration, cured in a short time by change of air. A lady suffering from locomotor ataxia received direct relief from each application. This relief lasted twentyfour hours, but was followed the next day by an exaggeration of the symptoms; she was worse at the end than at the beginning of the treatment. A case of muscular pain and weakness of the legs was always rendered worse the day after the application of the electricity. The doctor then mentions some other undesirable effects, which were, however, transitory in their nature. In conclusion he says: "As far as I am able to judge, the harm that may be done by electricity mostly arises from over-stimulation; that is, exhaustion of the spinal, or ganglionic systems."-Boston Medical and Surgical Journal, October 25.

TREATMENT OF Hæmoptysis from Lung Cavities.— Dr. R. Douglas Powell, Physician to Brompton Hospital for Consumption, makes the following remarks on the treatment of hemorrhage from phthisical cavities. (Lancet, December 1, 1877):

"The treatment is such as would be dictated by common sense. The most absolute rest in bed is imperative. Beware of the brandy bottle. The first thing the

friends of the patient naturally do when they find him faint from hemorrhage is to give him brandy. But this moment of faintness is just the period at which there the opportunity for the hemorrhage to become stanched by the formation of a coagulum, and so long as the pulse does not absolutely fail, we should withhold stimulants, and avoid them throughout the treatment of the case. We can scarcely expect drugs to do much in such cases as these. Ergot in full doses and turpentine have been found most useful at this hospital. The momentary application of an ice-bag to the chest or between the shoulders appears sometimes to be useful. When the shock is great, opium will best After a day or two, if the exhaustion and relieve it. anæmia be great, an astringent form of iron is often of great value, as the iron alum or the pernitrate of iron, but the effect of these remedies must be closely watched. In cases in which there is a tendency to recurrence of the hæmoptysis, such patients usually making blood fast, the diet should be carefully restricted, principally to fish and farinaceous food, without stimulants."

IMPACTED CERUMEM. -- Free syringing generally is all that is required for the removal of this common and troublesome cause for deafness. Often the mass does not come away until a considerable time is spent in syringing. But it will always ultimately yield. After a portion has been removed. and when the grub of cerumen or waxy cast of the meatus is washed out, the latter should be examined with a speculum. Much harm may be done if this step be not attended to, the healthy membrane may be forcibly syringed and much mischief accrue. On the removal of cerumen, the membrane is generally seen dull, with an absence of transparency, and the surface of the malleus has an inflamed appearance. The collection being removed, an interval of a few days will generally set things to rights; and if this be the sole cause of the symptoms, nothing further is necessary. If any tinnitus or pain persists, or if the deafness is not relieved, we must suspect other mischief and proceed to examine the ear closely. The usual complaint made by patients suffering from "wax in the ear" is a deafness with a stupid feel and some form of tinnitus. I generally politzerize a patient after removal of

I may here say that most ridiculous errors are often committed from the non-recognition of this simple cause of deafness. Nothing can be more exasperating than for a patient to return a long distance to a surgeon, and find that the source of all his blistering and leeching, and perhaps physicking, lay in a mass of easily removable wax; yet this often occurs. The characteristic black shining surface of the wax can hardly be mistaken with any degree of care. At times the surface has a peculiar luster which causes it to look like the membrane; but it is only necessary to mention this in order to prevent any surgeon from falling into so unfortunate an error. Two imprudent practices may be referred to in connection with this mat-First, the habit of inserting picks, rolls of towels, etc., into the ear to cleanse the meatus. This can only do harm, and ensures the consolidation of any cerumen in the canal and its impaction on the drum. Secondly, the fashion of placing cotton wool in the ear. It will be sufficient to mention that not long since I removed three layers of wax and two of cotton wool from the ear of a gentleman who was completely oblivious of the presence of the wool.—H. Macnaughon Jones, M. D., in Dublin Medical Press and Circular.

COMPOUND SYRUP OF PHOSPHATES.—Ernest C. Saunders

recommends the following process:

1. Dissolve two hundred and forty grains of iron wire, No. 20, in three ounces by weight of syrupy phosphoric acid (sp. gr. 1.75), diluted with four fluid ounces of water, contained in a flask loosely stopped with tow. When all action has ceased, heat to the boiling point and filter through paper in a funnel with a long neck reaching to the bottom of a beaker containing a little syrup, which, floating on the iron solution, will prevent any oxidation.

2. Dissolve nine hundred and twenty-three grains of freshly slaked lime in a mixture of nine and one half ounces, by weight, of syrupy phosphoric acid and fourteen

fluid ounces of water, and filter the solution.

3. Dissolve fifty four grains of crystallized carbonate of sodium and seventy-two grains of carbonate of potassium in a mixture of one half ounce, by weight, of syrupy phosphoric acid and one fluid ounce of water, and filter the solution.

4. Mix the three solutions and add water to bring the

measure to twenty-eight fluid ounces; dissolve in it by the aid of heat three and one-fourth pounds of sugar and eighty-five grains of powdered cochineal. Strain while hot, and when cold add two fluid ounces of orange-flower water, and sufficient distilled water to make the whole measure sixty-four fluid ounces.

RAISING THE ARM IN EPISTAXIS—Dr. Mackenzie, in an article in your last number, alludes to the treatment of raising the arm above the head, and stopping the nostril on the affected side, as sometimes effectual in arresting the flow of blood.

Having tried this plan on one or two occasions effectually, I naturally sought for an explanation of the success of a method apparently so empirical. The reason of it at length appeared to me both simple and interesting. It was this: In holding the arms above the head—for in my case I did both—the scapulæ are elevated and rotated outward, and by this means extension is made upon the ribs by the serrati magni muscles; the chest thus expanded causes an increased flow of blood from the venous or right side of the heart to the lungs, and pro tanto from the head, and a temporary or partial stasis or diminished flow of blood to the left or arterial side of the heart, thus reducing the vis a tergo, and allowing to such an extent, therefore, time for the blood to coagulate in the vessels of the nose.

This explanation was confirmed by an observation which just reverses the condition of things. A patient came to me suffering from occasional attacks of hæmoptysis, and spontaneously remarked "that it was sometimes brought about by raising his arms above his head, as in removing anything from a shelf or otherwise." This statement beautifully fitted in with my views, and struck me at once as a remarkable confirmation of what before might be taken only for a possible or plausible explanation.—Robert W. Ellis, in the Lancet, November 17.

THE DIGESTIVE PROCESS IN THE STOMACH.—Kretschy reports the results of some careful observations on a case of gastric fistula. (1) It was found that the digestion of breakfast took five hours and a half, that the maximum of acidity was reached at the fourth hour, and that it then fell until within an hour and a half a neutral reaction was

reached. The digestion of the mid-day meal lasted seven hours. The maximum acidity was reached at the sixth, and in the seventh a fall to neutrality took place. Even in the fifth hour numerous microscopic bands of muscular tissue were recognized, and also starch granules. evening digestion lasted from seven to eight hours. On the day before the menses appeared there were decided fluctuations in the acid curve. On the day of their appearance a neutral reaction was never obtained the whole day. The evening digestion was not delayed. On their cessation, the normal acid curve at once returned. (3) The patient took three cubic centimeters of alcohol in one hundred of water to her dinner. This rendered the process slower. (4) Coffee at dinner lowered the acid curve and caused the neutral reaction to set in an hour later. (5) Pepsin, taken just before dinner, did not shorten the process. (6) Distilled water, taken moderately, exerted no acid reaction on the gastric juices. (7) Alcohol is converted into aldehyde in the stomach.

CROTON-CHLORAL.—From all his observations and autopsies, Livon draws the following conclusions:

1. Croton-chloral acts upon the central nervous system.

· 2. In small doses it acts upon the brain alone, and by its intermediation solely upon the sensitive cranial nerves.

3. In larger doses, its action extends to the cord and sensitive spinal nerves.

4. The motor nerves are only acted upon secondarily.

5. It is only in exaggerated doses that the arrest of the heart's action, and of the respiration, may be provoked by cessation of nervous afflux.

It may be given by the stomach or hypodermically. The author's formula for administration by the stomach is: Croton-chloral, 2 grammes; glycerine (warm), 6 grammes; extract licorice, 4 grammes; water a syrup aa, 45 grammes. For hypodermic injection his formula is: Croton-chloral, 1 gr. 60c.; glycerine and cherry laurel water aa, 16 grammes. Each gramme of the solution contains 5 centigrammes.

Divided doses of 5, 10 or 20 centigrammes, repeated as required several times in succession, generally succeed in quieting pain. From 50 centigrammes to 1 gramme

instantly relieves pain of considerable intensity, and for very severe pain the dose may be carried up to 3, 4 or even more grammes at once.—Chicago Med. Journal and Exchange.

INTESTINAL GAS AND FLATULENT DYSPEPSIA.—The following conclusions are drawn from a paper upon the above subject, read by M. Leven before the Academy of Medicine, Paris:

1. Food does not seem to produce gas; that found in the digestive tube comes from the external air, the blood

and the fæcal matters.

- 2. The gas formed during the course of flatulent dyspepsia is not due to the decomposition of food, but comes from the three above-mentioned sources. It is continually kept in motion by the pathological contraction of the intestinal muscular fiber. Although continually expelled, it is constantly renewed. Its production may be incessant, as well in the fasting individual as in one well nourished.
- 3. This symptom, production of gas, therefore implies the existence of an intestinal irritation which is always consecutive to a stomachal dyspepsia of already long duration.

4. The course of the disease, and the treatment followed to obtain a cure, confirm these clinical observa-

tions.

5. There is no necessity of instituting a medication against the gas per se; moreover, the so-called absorbent powders, as charcoal, do not absorb the gas, as I have proved experimentally. Although block charcoal may possess this property, as soon as it is reduced to powder it loses it completely.—L'Union Medicale, October 11, 1877.

The Treatment of Abortion.—Dr. Malins, of Birmingham, in speaking of this subject before a branch of the British Medical Association, said that the proportion of abortions to labors at the full period, observed in his practice, was as one to six or seven. Abortion, meaning by the term the premature expulsion of the ovum, might be, (1) passive or latent; (2) active or inevitable. (1) Passive.—The important symptoms were pain and hemorrhage. For the pain he would give full doses of opium, preferably in the form of liq. opii. sedativus. For the

hemorrhage in this form, rest was necessary. It having been repeatedly noticed that women who were sick aborted least, Dr. Malins, on this indication, has found the administration of vini ipecac, m. v., every hour for twelve or fourteen hours, a safe and simple remedy. (2) Active. —When there was great hemorrhage and pain, bold treatment must be followed, the vaginal or uterine plug being used, with ergotine hypodermically. He condemns the use of towels, handkerchiefs, sponge or strips of lint as plugs, but recommends that the vagina should be well and carefully packed with pledgets of tow or oakum. Where the embryo was dead and was retained for an indefinite time in utero, rapid dilatation of the os uteri by means of sponge-tents should be employed.—Med. and Surg. Reporter, July 21, 1877.

Pathology of Scurvy.—Mr. Charles H. Rolfe, in the Lancet, sums up his views of the subject, as follows:

1. That the primary change that occurs in scurvy is a

a chemical alteration in the quality of the blood.

2. That this chemical alteration, as far as can be judged from inferences drawn from the analysis of urine in patients suffering from scurvy, and analysis of "scorbutic and anti-scorbutic" diets, points to a diminution of the alkalinity of the blood.

3. That this diminution of alkalinity is produced in the first instance (physiologically) by an increase of acid salts (chiefly urates) in the blood, and finally (pathologically) by the withdrawal of salts having an alkaline re-

action (chiefly alkaline carbonates).

4. That this diminution of the alkalinity of the blood finally produces the same results in scurvy patients as happens in animals when attempts are made to reduce the alkalinity of the blood (either by injecting acids into the blood or feeding with acid salts), namely, dissolution of the blood-corpuscles, ecchymosis, and blood-stains on mucous surfaces, and fatty degeneration of the muscles of the heart, the muscles generally, and the secreting cells of the liver and kidney.—Med. and Surg. Rep.

Modifications in the Perspiratory Secretion in Diseases of the Skin.—M. Aubert related the results of his researches upon this subject before the French Association for the Advancement of Science, at its late meeting at Havre. To determine the normal secretion, he ap-

plies a piece of paper to the skin at the glandular orifices; the perspiration dampens the paper, but the mark remains invisible, until a brush wet with a solution of nitrate of silver is passed over it, which, acting upon the chloride of sodium in the secretion, leaves a violet dot upon the paper. By this means M. Aubert studied the modifications of the secretion in diseases of the skin; nævus, port-wine stains, icthyosis, erysipelas, scabies, lupus, favus, simple herpes, herpes circinatus, psoriasis, etc. In all cases, this general rule was verified, that all irritations of the skin completely suppressed the perspiration, and, even when the irritation has disappeared, some time must pass before the secretion recommences. In all cicatricial tissue, there is a great destruction of the sudoral glands, but from those that remain there flows an exaggerated secretion.—L'Union Medicale, September 25, 1877.

PREPARATION OF DIALYZED IRON.—The first step in the process is the preparation of a tolerably concentrated solution fully saturated with ferric hydrate and containing a minimum amount of acid. One method of accomplishing this consists in adding aqua ammoniæ sp. gr. .960 to a solution of ferric chloride (liquor ferri chloridi, U. S. P.) so long as the precipitate formed is re-dissolved. It is best to dilute the ferric solution to a sp. gr. of 1.3 before adding the ammonia. One volume of water should be added to five volumes of the officinal preparation. A second method of preparing the solution for dialysis consists in adding to the solution of ferric chloride a sufficient quantity of freshly precipitated and thoroughly washed ferric hydrate to completely saturate it. The solution, prepared by either method, is subjected to dialysis in the usual manner. A convenient substitute for the dialyzer consists of a pig's bladder, which is filled with the solu tion, securely tied, and immersed in water, which is to be frequently changed.—Canadian Pharmaceutical Journal.

EFFECT OF MAGNETISM ON INSECTS.—Dr. John Vansant, of New Orleans, writes to the Philadelphia Medical Times, of a recent date, giving an account of a series of experiments relative to the action of the magnetic current on insects. One of these experiments was conducted upon a spider, with a mere toy magnet. On

placing the instrument, armature removed, in such a position that the insect was between the poles, it stopped almost instantly, and in a few seconds became perfectly motionless, but, two or three minutes afterward, commenced to move its legs and to lift and depress its head in a very singular manner. In about five minutes it ceased its movements altogether and was apparently dead. He has killed worms and insects in this way frequently, and concludes from his experiments that terrestrial magnetism must exercise an important influence upon the functions of animals.

SYRUP OF PHOSPHATE OF IRON, QUINIA AND STRYCHNIA.-This syrup, which, like the last one, is a troublesome one to prepare by the formulas of the books, may be made without difficulty according to the same authority by the following process:

1. Prepare a solution of ferrous phosphate as for the

compound syrup of phosphates above.

2. Precipitate the alkaloid quinia from six hundred and twenty-five grains of the sulphate by ammonia in the usual manner, and dissolve it, together with sixteen grains of strychnia in one-half ounce, by weight, of syrupy

phosphoric acid and one fluid ounce of water.

3. Mix the solutions; make up the measure to ten fluid ounces, and add fifty-four ounces of simple syrup. fluid drachm contains one grain each of ferrous phosphate and phosphate of quinia, and one thirty-second grain of phosphate of strychnia.

CROTON-CHLORAL FOR CILIARY NEURALGIA.—Friedinger.— (Wiener Med. Wochenschrift, No. 31, 1877.) Croton-chloral seems to have an almost specific influence on the sensory fibers of the fifth nerve, and it can be more surely relied upon to allay those fearful pains, which attend the violent inflammations of the iris and choroid, and are known as ciliary neuralgia. In all cases in which it was given for this neuralgia, it has exerted its anæsthetizing effect without producing any collateral disturbance. This is the formula:

R Croton-chloral hydrate -1 gramme, Spir. vin. rectif. - - 4 - 150 . 66 Aq. destill. Syr. aurant. cort. - -- 15 M. One tablespoonful every two hours.

ON THE REGENERATIVE PROPERTIES OF THE PERIOSTEUM AND ITS PRACTICAL APPLICATION.—When the periosteum of a bone has been removed to a considerable extent, it will be replaced by new periosteum, without necrosis of the bone occurring. If this new periosteum is deprived of its bone, the bone will also be replaced. This has been proven by experiments of Bernhard Heine.

Experience teaches Langenbeck that this reproduced periosteum possesses great vitality, and that for plastic operations the integument that has become adherent to the bone, when removed with its periosteum, is of great

value.

The author relates the history of two cases in which, through accident, the skulls were injured so that large openings were left in the cranial cavities. In these cases L. used the integuments of the scars, with its periosteum, to cover and close the openings, and obtained the best results. He also related the case of a person who had lost a portion of the hard palate through syphilitic ulcerations. By using the tissue of the scars left, he succeeded in a partial restoration of the bone, while he had failed by using portions of the regular muco-periosteal lining or integument from unaffected portions of the mouth. Gangrene of these cicatrical flaps only occurred in anæmic individuals that should have had a previous tonic treatment.—Centralblatt fur Chirurgie.

Battery Fluid for Zinc-Carbon Galvano-Caustic Battery.—Mix eighty fluid ounces of sulphuric acid with ten pints of water; pour the mixture upon four pounds avoirdupois of potassium bi-chromate, and stir well for five minutes; then add twenty pints more of water. Finally, when cold, add thirty fluid ounces of sulphuric acid. When it is desired to increase the intensity of the action, a small quantity of a solution of ammonium nitrate in nitric acid may be added to each cup of the battery.—Detroit Lancet.

CARBOLATE OF IODINE INHALENT OF DR. PERCY BOULTON
Tinct. iodinii co
Acid carbolic. M vj.
Glycerine
Aq. pur
Mix. The solution soon becomes quite clear and color-
essL. C. Hogan, in Chicago Pharmacist.

BOOK NOTICES.

TRANSACTIONS OF THE OHIO STATE MEDICAL SOCIETY. Thirty-second Annual Meeting, June 12, 13, 14, 1877.

The Society met at two o'clock P. M., in the hall of the Put-in-Bay House, Dr. T. W. Gordon, First Vice-President, calling the meeting to order. Clergymen do not seem to flourish in that locality, as none could be found to open the exercises by prayer, so that ceremony had to be dispensed with.

The work, forming a 12mo volume of 200 pages, contains the annual address of the President, the minutes of the proceedings, and the various papers read. Papers were read by Drs. W. J. Scott, Thomas W. Gordon, B. B. Leonard, J. H. Pooley, S. S. Gray, S. F. Forbes, S. C. Ayres, X. C. Scott, C. S. Muscroft, Jonathan Morris. The papers were, mostly able and interesting. The Society will hold its next annual meeting in Columbus, beginning on the second Tuesday in May, at two o'clock P. M.

HANDBOOK OF THE PRACTICE OF MEDICINE.—By M. CHARTERIS, M. D., Professor of Practice of Medicine, Anderson's College, Glasgow, etc. With illustrations. 12mo, pp. 336. 1878. Philadelphia: Lindsay & Blakiston. Cincinnati: R. Clarke & Co.

This is one of the volumes of the "Students' Guide Series," which Lindsay & Blakiston, the well-known publishers of medical works, are publishing. It will undoubtedly become very popular with medical students, for it is better adapted as a text-book of practice in college than any work with which we are acquainted. It is a Practice of Medicine which has eliminated from it every thing but the essentials. All discussion, all speculation, is sedulously avoided, and only the well-established facts stated. This, of course, brings the volume within a very small compass, without omitting anything necessary for an intelligent understanding of a disease and its treatment. With this work the industrious student can soon familiarize himself with the etiology, characteristic symptoms, anatomical characters, course, etc., of all the diseases which are commonly lectured upon during a college term.

There are now nine volumes of this "Students' Guide

Series" published. We have no doubt the Series will meet with great popularity.

STATE REGULATION OF VICE.—Regulation Efforts in America. The Geneva Congress. By Aaron M. Powell. 12mo, pp. 127. New York: Wood & Holbrook. 1878.

This little book will be interesting to all intelligent. moral, humane individuals who lament the extensive prevalence of vice, and are anxious in regard to the proper means for its suppression. It opposes giving any sort of vice a legal status and government sanction. As regards prostitution, it is of the opinion that recognition not only does not afford protection to public health, but that in promoting sexual immorality it aggravates and augments the fearful maladies which that immorality begets. The views set forth in regard to regulation are precisely the same as we have urged at various times for a number of years in our editorials in the News.

PRACTICAL GYNÆCOLOGY. A Handbook of the Diseases of Women. By Heywood Smith, M. A., M. D., Oxon., Member of the Royal College of Physicians, etc. With illustrations. 12mo, pp. 205. 1878. Philadelphia: Lindsay & Blakiston. Cincinnati: R. Clarke & Co.

This is another of the "Students' Guide Series" of medical works which Messrs Lindsay & Blakiston are publishing, and which, as we mentioned when describing Charteris' Practice, are so well adapted for students when in attendance upon medical lectures. The author very fitly describes his purpose in publishing this work in the following language: "My object in the present work has been to present the busy practitioner with a book systematically arranged, burdened with no discussions on vexed questions of pathology, and giving, at a glance, the salient points of diagnosis, and treatment with clearness and brevity."

As Gynæcology, in the large majority of schools of medicine, at the present time, is taught by a chair separate from that of obstetrics, a text-book that describes only the essentials of the various diseases, but includes all of them, omitting all discussions, speculations, and issues not directly pertinent, will fill a very decided want. Such a work the student and practitioner will find the present one.

ON THE USES OF WINES IN HEALTH AND DISEASE.—By Francis E. Anstie, M. D., F. R. C. P. Reprinted from the *Practitioner*. 12mo, pp. 74. New York: Macmillan & Co. Price, 75 cts.

It will be recollected that Dr. Anstie, recently deceased, while editor of the *Practitioner*, wrote a number of articles for that journal, taking the ground that, both in health and disease, the moderate use of alcoholic beverages was beneficial. This little book embodies those articles.

The learning and extensive accomplishments of Dr. Anstie would qualify him pre-eminently to make the best arguments for the habitual use of alcohol that could be made. If he failed to make out a case, it would be in consequence of the inherent weakness of his side, and not through want of ability of the advocate.

The work is divided into two parts. Part I. On the Place of Wines in the Diet of Ordinary Life. Part II. On the Heavy of Wines in Discours

the Uses of Wines in Disease.

The physician will find the work quite interesting, as it gives quite a full description of all the various wines, their comparative value, when and how they should be used, in what affections they are the most beneficial.

Address before the Rocky Mountain Medical Association, June 6, 1877. By J. M. Toner, M. D., Washington, D. C. 12mo, pp. 112.

We are indebted to the author for a copy of this very admirable address.

We learn from the Introduction that the Rocky Mountain Medical Association had its origin in a desire to perpetuate and keep fresh the friendships formed among the physicians who actually crossed the Rocky Mountains to attend the meeting of the American Medical Association in San Francisco, California, in May, 1871. The number of these was 123. The ladies of the party, and a few non-professional gentlemen, are recognized as honorary members.

The address is highly worth perusing. During the course of it is treated the geological age of the world, the appearance of animal life upon the globe, antiquity of man, archæological remains of extinct races found on the American Continent, origin and practice of medicine among uncivilized races, more especially the North Amer-

ican Indians. It is stated of the latter that they practiced venesection, cupping, the use of the actual cautery, styptics, poulticing, and were successful in the treatment of venereal disease.

Correspondence.

CINCINNATI, February 1, 1878.

Editors Medical News:

In examining some European Journals I have gleaned the following information in regard to pilocarpium, a new sudorific, which may be interesting to your readers.

The active principle of jaborandi was found by Merck to consist in an alkaloid which he calls philocarpium muriaticum—pilocarpic muriate—and which occurs in transparent white crystals, readily soluble in their own

weight of water.

Pilocarpin, as the new substance is called, possesses all of the diaphoretic and sialogogue properties of jaborandi that were first brought to the notice of the French profession by M. Gublar, of Paris, and to the British profession mainly through the experiments of Drs. Martindale, Ringer, and Gould, of London. These gentlemen, experimenting with the leaves of jaborandi-polycarpus pinnatus—found that within ten minutes after injecting a pint of infusion with a drachm of the dregs there was a glow. Copious salivation, which ultimately gave rise to a sense of collapse in the salivary glands; violent perspiration, in comparison to which a Turkish bath was said to be hardly a circumstance; vision became dim: contraction of pupils; pulse 104; articulation difficult and indistinct; some vomiting; but prostration was not so intense but that recovery was complete next day.

Pilocarpin, however, when one-third to one-half a grain is given hypodermically in a two per cent. hydrochloric solution, produces, within from two to ten minutes, (1) increased salivation which reaches its acme within twenty minutes; (2) increase pulse frequency of about eighteen beats per minute. These conditions are attended with increased warmth of the whole body, which soon results in perspiration which begins at the head and extends downward. A single dose of pilocarpium is capable of producing the evacuation of from two to four pounds

of perspiration; (3) lachrymation; (4) pulse falls to normal standard, with recedence of perspiratory activity; (5) the temperature rises with the pulse and recedes.

CHAS. REED.

EDITORIAL.

Delay.—As will be perceived by the imprint, at the beginning of the present year we changed our printing office. At the former office they were lacking facilities for the prompt issuing of the journal, and it was consequently nearly always late in getting out. At our present office the facilities are very much greater, and so soon as we have gotten well settled in our new place, and rid of the drawbacks incident to a removal, the News will be issued on time.

Erratum.—We desire to call the attention of our readers to the fact that the address of Mr. G. S. Woolman, optician, New York, is 116 Fulton Street, and not 147, as has been appearing in his advertisement for some time. Mr. W. keeps a full stock of microscopes and accessories of the best quality at the lowest prices.

A JUST DECISION.—Just as we are completing the last form of the News, we learn that the Supreme Court of Indiana has decided that a physician can not be compelled to give expert testimony in a case of litigation without being first paid, if he demand it, a fee commensurate with the value of the testimony. This decision was the result of an appeal from the decision of a Court of Common Pleas at Harrison, Indiana, ordering Dr.—, who was on the stand as a witness, to reply to a question that involved his knowledge as a physician.

Heretofore, as our readers are aware, courts have been in the habit of compelling physicians to testify, not only to facts which had come to their knowledge as they might come to the knowledge of any one, but also in regard to subjects which they only, as professional men, could be cognizant of, and to be competent to answer had required, on their part, the expenditure of labor, time and hard study. It is strange that law, being for the purpose of justice—to give to every man an equivalent for what he performs—should have required him, for these

many years, to render the most important services without compensation, or only the trifling sum of seventy-five cents paid a witness. But, although it has been very tardy, we are happy to announce that justice has finally been awarded.

LACTOPEPTINE.—This is a preparation which is acquiring no little reputation in the profession. It is composed of pepsin, pancreatine, diastase or vegetable ptyalin, lactic and hydrochloric acids, and sugar of milk. It is said to digest from three to four times more coagulated albumen than any preparation of pepsin in the market. It has been found to be an excellent remedy in gastritis, chronic dyspepsia, in the diarrhea and dysentery of children, in the vomiting of pregnancy, etc. It has received much praise, indeed, in the wasting diseases of children, which is attended largely with improper digestion of food. We feel confident that our friends will be pleased by a fair trial of it, and we hope they will make such, and some of them furnish us with a report.

THE CONTROVERSY OF DRS. WOODWARD AND BARTHOLOW.—In this issue of the News appears the reply of Dr. Bartholow to the "Brief Rejoinder" of Dr. J. J. Woodward, in the November number. It was handed to us in January, but was received too late for appearance in that number.

Probably some censure is justly due us for accepting communications in which more spleen is vented than scientific truth unfolded—in which the disputants seem more anxious to overwhelm their opponents with epithets than to overpower them with their reasoning-but we plead that when it is permitted to rejoin and surrejoin, it is best always to allow the individuals to do it in their own way. With a great many to restrict, even in the least, is to render them hors du combat. We have often observed witnesses giving testimony on the witness stand. They would be rendered ludicrously helpless so long as the attorney attempted to define the mode, but when permitted to pursue their own way they would get along. Neither one of the parties is hurt by the nicknames applied to him, so that neither one, we think, can successfully charge us with aiding the other in injuring him.

Drs. Woodward and Bartholow, it is needless for us to

say, are both gentlemen of high standing in the profession as men of sciences. Their respective articles will afford sufficient insight to judge of them in other respects.

PHILADELPHIA DRUGGIST AND CHEMIST.—We have received a couple of numbers of this monthly, devoted to the interests of pharmacists. It is very ably conducted by the editor, Dr. C. C. Vanderbeck. The interesting article upon "Excipients," published in last month's News, was copied from it, although there was a failure of crediting to it. Our druggist friends and physicians who compound their own medicines, and others, will find it a very valuable journal, and well worthy of their patronage. Price, \$1.50 a year, in advance.

Annoyances.—In this life there are very many annoyances to undergo. Do what one will, however carefully one may attend to his own business, annoying inflictions will take place. The Psalmist David was the victim of such all his life, as is evident from his writings. He frequently speaks of detractors, slanderers, of those who would thrust their tongue out at him, and would make all sorts of faces at him. His curses of them were not loud, but they were deep. He often wondered how it was that the Almighty allowed them to live, and he was about bringing a charge of injustice against him, when his eyes became opened and he "saw it all." Says he, "Until I went into the sanctuary of God then understood I their end." And, after understanding "their end," he dropped his envyings and ceased his complaints.

It would seem that perverse and evil-minded persons, whose conduct is a continual source of annoyance, are created for the purpose of establishing patience, long-suffering, meekness and other Christian graces in those who feel they have a mission of usefulness to perform in this world, and who set themselves about to fulfill it. If all was "plain sailing," if there were no unpleasant experiences to meet, if nothing occurred to irritate, many qualities which ennoble the mind and exalt the individual would perish for want of proper cultivation. Mental and moral faculties expand and strengthen by using as the muscles of the body do when they are exercised; and it is the opportunity which is afforded in this world of exercising them that the virtues have reached their ex-

alted pinnacle, and are regarded as the most lovely of endowments.

No one would be flattered by the thought that his end is to be a plague in life—that the purpose of his creation was to endow others with the higher virtues by affording them opportunities to exercise their moral functions—but certainly it must be assented to that this is the mission of not a few when we come to carefully study the world, past and present. Why was it that David had so many "ups and downs," was plagued to such an extent, if it was not that the chastening might ennoble and refine his moral nature? But if a class is to endure grievous annoyances, it follows that there is another to inflict them—that there are those "whom pride compasseth about," "whose eyes stand out with fatness," "who set their mouth against the heavens, and their tongue walk-

eth through the earth."

Many seem to think that there is a greater demoralization at the present time than there ever was before. The grandfathers and grandmothers compare the present time with the past, as regards the general prevalence of immorality and wickedness, very much to its discredit. They assert, with much confidence, that the world is becoming worse and worse every year--that no such iniquity prevailed in the days when they were young as now. But we are disposed to consider that men and women are pretty much the same in all ages-no better, no worse. The same impulses, desires and inclinations prevail now as then, and have about the same influence upon the conduct. About the same proportion of individuals are ruled by the baser passions—the mere selfish animal instincts; about the same are inspired by the higher faculties, the nobler impulses. It is sickening, of course, to see how ready many are to commit perjury, to break their most sacred covenants and vows, to trample under foot their solemn pledges, to go back on their word, and hold at naught their obligations; and when one witnesses not a few guilty of these things he is impelled, to some extent, to consider that vileness is the rule and goodness the exception. But it is an error. There are as many righteous now as ever there were--probably more. David was continually carrying on a contest with the enemies of the truth, in his time, many years ago. Elijah complained to the Lord that every one had gone astray of the people of Israel, but he was informed that there were seven thousand men who had not bowed the knee to Baal. Jugurtha, as stated by Sallust, said every one at Rome was venal, but he found himself mistaken at his cost. Catiline confided in the demoralization of all

in high places, but he lost his life in so doing.

But we did not set out to write an essay on the general prevalence of wickedness or righteousness in the world, as it exists now or has existed. In our limited experience we have met with not a little of each, especially of the first, and have had nearly, probably, as much occasion to pronounce all men liars as a certain biblical writer. We have witnessed men selling themselves to the devil for as nearly nothing as possible, and yet we still have faith in human integrity. We believe that there is righteousness in the world, and that the tendency is for it to increase. Although we have dragged men out of obscurity, which would have always surrounded them if we had not brought them into notice, although there are those who have more or less reputation through us for merits that they never possessed, and we have never received any thanks for our services, but, on the contrary, have been treated by the basest ingratitude, yet we are not disposed, on account of the vile conduct of these miserable creatures, to bring a railing accusation against every one, and assert that there is no virtue in the world. We are inclined to take a philosophical view of the annoyances which have resulted to us, and consider that our being made the victims of perjury, covenant-breaking, broken pledges, calumny, etc., is for our good, working in us patience, forbearance, long-suffering. Of course our experience will cause us to throw pearls before swine more carefully, yet we feel we have been profited. Certainly our judgment and perceptive faculties will be increased and strengthened by the using, and our moral nature enlarged. Our enemies, no doubt, will obtain their reward in due time; our faith in that respect is firm.

We will continue the subject at another time.

THE

CINCINNATI MEDICAL NEWS.

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PRIGINAL CONTRIBUTIONS

Valedictory Address to the Graduating Class of the Cincinnati College of Medicine and Surgery.

DELIVERED AT PIKE'S OPERA HOUSE, FEBRUARY 28, 1878

By J. W. UNDERHILL, M. D.,

Lecturer on Medical Jurisprudence.

Gentlemen of the Graduating Class:

To me has been assigned the duty of addressing you to-night. For this courtesy I thank my colleagues, the gentlemen of the Faculty. I accept it as a compliment unmerited, and trust that I appreciate the honor which belongs to the undertaking. Heretofore I have never so reluctantly addressed you. The relations previously existing between you and the Faculty have been for the purpose of imparting instruction, enabling you to graduate with honor to yourselves and the profession; and I trust that my humble efforts in the lecture-room have contributed somewhat to this object. But the ordeal is passed—you have received your degree—and to-night we meet not so much to give instruction, as for the purpose of bidding farewell.

It is customary, on occasions of this kind, to impress upon the class good advice, and to stimulate them with high and noble aspirations. It is a custom none the less proper because trite. And it is but natural that, interwoven with my remarks this evening, there may be some words of advice and suggestions relating to your conduct in the profession at whose threshold you now stand. I make no apology therefor, but hold that I would be

derelict in duty should I neglect to give any advice what-

ever concerning your future professional career.

I have chosen no special theme for this occasion; but, in addition to the suggestions which I may make for your future guidance, I shall dwell more particularly upon a few of the

SALIENT POINTS OF LAW

Impinged upon by the science and practice of medicine Great perplexity is often experienced by the young practitioner in choosing an advantageous location for practice. Certain questions, difficult of solution, have to be determined by most men before deciding upon the field of their future labors. But, first, let me warn you against selecting an unhealthy locality. Choose one that is healthy; for your own health, and that of your family, are of the first importance. Secondly, do you prefer the city or the country? If you desire a metropolitan practice, and have a very long purse, as well as great continuity of purpose, then choose the city wherein to test your powers. But if you wish to enjoy, at times, that healthy tranquillity of mind consequent upon freedom from turmoil and over-excitement, then select the quiet country town; for, after all, the country practitioner enjoys far greater contentment, since he is comparatively free from the rivalry and mental tension incident to the profession in large cities. And, thirdly, do not seek a town where there are few or no other physicians. There is in our whole country scarcely a hamlet or village without a doctor. Do not hesitate to go where there are other physicians. If they have succeeded in a certain locality, do not imagine that your chances there for success are thereby diminished.

From statistics we learn that there are in the United States an average of six hundred inhabitants to every physician. In European countries the relative number of the population to each physician is considerably greater. Thus, in Great Britain there are 1,612, and in France 1,814 inhabitants to every doctor, while there is but one physician to every 3,000 of the population of Germany.* But, glancing again at statistics which more nearly concern us, we find that in the rural districts of the State of Ohio there is one medical man to every five hundred per-

^{*} Vide Dr. Pepper's Address in Practitioner, February, 1878.

sons, while in Cincinnati there is one to every 650 of our population. The income of the upper one-fourth of all physicians is greater than the combined incomes of the other three-fourths. But, be not dismayed by the reflection that you must enter the lists in company with the lower three-fourths. All have to commence at the lower rounds of the ladder; and whether you ever reach the upper quarter depends upon yourselves more than upon any and all exterior circumstances. The oft-quoted reply of Daniel Webster to the young man who asked him if there was room for still another in the legal profession, is equally applicable to yourselves. "Yes," responded that great statesman and orator; "there is plenty of room in the upper stories." As a lawyer, few have been his peers, and none his superior; yet he, as all other great men in the learned professions, "was the architect of his own fortune." That bard who, more than any other, has written for all ages and peoples, tells us:

> "Some are born great, Some achieve greatness, And some have greatness thrust upon them."

Let me warn you, gentlemen, that in the medical profession no man is born great, nor does he have greatness thrust upon him, but he must, by his own strong right arm, achieve whatever greatness he may obtain. Frequently we may think that a man has attained distinction by some lucky chance, when if the truth were made public, it would be discovered that eminence had been reached only by an iron will and intense labor. In this connection I can not forbear quoting a sentence from a recent speech of Mr. Gladstone, complimentary to his political opponent, Mr. Disraeli. Said England's great ex-premier: "There are many men in the Government who will compare very honorably with Lord Beaconsfield in many respects, but there is not one man in the Government that has a tenth part of the tenacity of will, and the patient purpose which belongs to Lord Beaconsfield."

Some neophytes in the practice of medicine, as well as in that of law, expect to mount to the topmost round of the ladder at a single bound. They think to begin the practice of their profession among the wealthy, and they despise the small things which mark the beginnings of the success of others who have achieved eminence. I have noticed that physicians who began practice with the in-

tention of attending no poor patrons, never obtained patronage of any sort. If ever you obtain a lucrative practice, it will be gained in a great measure through your experience in treating the poor. In this respect you have more abundant opportunities for obtaining early a practical knowledge of your profession, than fall to the lot of tyros in any other of the learned professions. I recollect that when I was a medical student, our class was, upon a certain occasion, addressed by a gentleman who stands to-day first in the legal profession of this country. When speaking of remuneration received by professional men, he said: "There is work for the minister, because every man has a soul to be saved; and since every man has a body to be doctored, there is employment and remuneration for the doctor; but, alas for the poor lawyer!-not every man has an estate."

Although it is your duty to render much gratuitous services to the needy, yet you are forbidden to offer publicly, or to advertise, advice and medicine to them free of charge. Treat gratuitously as many of the poor as you desire, but remember that injunction from a Higher Source: "Do thine alms in secret." Besides, should you boast of your good deeds, it will be thought that you thereby intend to bid for professional patronage.

It is not likely that any of you will, at least in your earlier career, decline to attend a case to which you may be summoned. Indeed, some of you may have imbibed the notion, prevalent in certain quarters, that a physician can not legally refuse to visit a case when called, if it is in his power to obey the summons. This erroneous idea has probably originated in the fact that laws enforcing

COMPULSORY MEDICAL ATTENDANCE

Have been enacted in Prussia and Russia. Ten years since, the obnoxious statute was repealed in the former country, but it is still in force among the Russians. It prescribes severe penalties for refusing to attend a patient when summoned; nor is the law a dead letter, but is often enforced to its full extent.* In the United States, however, a medical man may lawfully decline to attend any particular call that may be made for his attentions. He may give or withhold his services, just as he chooses, and

^{*} Vide Cincinnati Clinic, February 9, 1878.

there is no law to compel his attendance. But, once having responded to the call, and having prescribed for the patient, he can not legally abandon him, unless for imperative reasons. Should the physician or surgeon, after having taken charge of the case, fail or be neglectful in his attentions, except on account of some such cause as has been indicated, he would render himself liable in pecuniary damages. Nor, in general, can he transfer a patient to another physician without the consent of that patient, or those acting for such patient. I think these are points, gentlemen, not sufficiently understood by either the profession or the people. Doubtless, if the latter had a knowledge of their legal rights in this particular, they would insist more frequently, and with greater force, upon their observance.

But it seldom happens that a physician refuses to obey a message requesting him to visit the sick; nor should he refuse, except for the most urgent reasons. The fact that there is no law to compel his attendance constitutes a powerful reason why he should be willing to bestow his services. He must fully consent to be deprived, in a great measure, of social recreations, of ease and comfort; and, if he can not forego the customary pleasures of life, and subject himself to privation and hardship, he has no business in the medical profession, and should give his place to some one who is willing to accept the duties with all their arduous responsibilities. We want no drones among us; only workers should apply for admittance to the med-

ical profession.

At no distant day, gentlemen, every State of our Union will have laws prohibiting, in effect, the practice of physic without a diploma or its equivalent. Already such enactments are in force in more than half the States. It is not long since such a statute was enacted by the Legislature of our own State, and, year by year, almost, is the territory reduced within which non-graduating physicians are permitted to practice. It is not claimed that the standard of medical education can be elevated only by legislative enactments—that good doctors can be made from poor material by a mere statute—but it is claimed that wise legislation in this direction is an exceedingly important auxiliary toward the attainment of higher professional excellence. I do not agree with those who believe that all except the regular profession should be denied the

privilege of practicing medicine. Grant to every one this permission—no matter to what school or system he may belong—stipulating only that he shall comply with the local law governing the practice of his profession. Irregular physicians are the tares that grow among the good wheat. Perhaps, indeed, they have a purpose to subserve. We should not question too far the discernment of an Allwise Creator; for, doubtless, many things are permitted whose utility we can not understand. The lowliest insect, and apparently the most useless form of vegetative life, may have a beneficial part to play in the economy of Nature.

And so it may be with quacks and charlatans.

But, gentlemen, let not these things disturb you. "Truth is mighty and will prevail." Have faith that the intelligence of the people is sufficient to finally separate truth from error. If there is sufficient truth in our system of medicine, it will stand forever. Nor will any government, religion or science endure, unless it have within it the seeds of truth. Then, if our system of medicine be the true one, we need no law to protect us from false systems. It would be against public policy to pass such discriminating laws, and it is safe to say they never will be enacted in any enlightened community. It would be argued, without much appearance of sophistry, that that practice must indeed be weak which requires to be bolstered up by law. In this country we have no State religion; much less should we have a special practice of medicine protected by government from other forms of practice. Whenever government fosters a particular system of medical practice

A WRONG IS COMMITTED.

And such attempt soon proves a failure. In every instance, so far as I am informed, where any government has interfered with the object of rewarding, or for the purpose of prohibiting and restricting, particular opinions relating to medicine or its practice, the result has been a complete failure. As an example of this, I may cite the instance of the French Parliament, which once passed a law against the use of antimony, and at another time decreed that no opium should be sold in the Empire.*

^{*} Vide Paris and Fonblanque's Med. Jurisprudence, Vol. I. page 35, of the Introduction.

But, to come nearer home, I need but name the absurd and unsuccessful attempt of our own Government during the late war to abolish the use of antimony and calomel in the army by striking these articles from the supplytable. The order came from William A. Hammond, who was at that time Surgeon General of the United States Army, and was, therefore, official interference by the Government. To the credit of the army surgeons, be it said, they resented such governmental impertinence, and largely signed petitions to Secretary Stanton for Dr. Hammond's removal

PHYSICIANS SHOULD KNOW THE LAW PERTAINING TO THEIR PROFESSION.

It must be admitted that every man, no matter what his pursuit, should have some knowledge of the general application of the law to that special pursuit before he can serve in it properly. If this be true, in general, of those who follow other professions and occupations, it is surely still more necessary that medical practitioners should have a knowledge of the law relating to the practice of their profession. The apothecary must know the penalty for selling poisons contrary to the State statute upon that subject. So, too, is it necessary that the surgeon should understand the pecuniary liability to which he is exposed in the practice of his specialty. For the want of a practical knowledge of this subject, a physician may have swept away from him, in a suit for malpractice, the hard earnings of a whole lifetime. Suits for malpractice . have become alarmingly frequent in some sections of our country. Indeed, to so great an extent has this indiscriminate attack been made upon the members of the medical profession, that many of the ablest practitioners refuse to have anything whatever to do with surgical cases. Even should they escape a verdict of damages, and gain the case, they nevertheless suffer somewhat in reputation. But I do not go to the extent of recommending you to decline all risk in surgical cases. If you possess average ability and skill, do not shirk the responsibility. The law does not hold you a warrantor of success, but it requires that you should not be neglectful, and that you possess the average skill of surgeons in the locality where you practice.

The members of the medical profession are to a great extent the

GUARDIANS OF THE PUBLIC HEALTH.

Frequently physicians are consulted by legislative or executive officers in reference to various circumstances liable to affect the health of the community. How, in such case, can they give advice without understanding the law as it may exist at the time, or the policy of the proposed enactment? I do not contend that every medical gentleman shall become a proficient lawyer, nor do I claim that every member of the bar should study medicine in its various departments, but I do maintain that if each would give proper attention to the other, they would more correctly understand and appreciate each other's responsibility and duties.

You will understand, then, that I claim your duties do not end with those you owe your patients. You owe, also,

certain

DUTIES TO THE PUBLIC.

You should should be watchful for the welfare of the people among whom you reside, and upon proper occasions give information in regard to the preservation of their health, and touching the manner of limiting the spread of contagious diseases. When epidemics devastate the country, you must not fly from your post, but remain and alleviate to the utmost the sufferings of those about you. As good citizens, you must also bear your share in supporting the government under which you live, and which protects us in our liberties. I am well aware that there are those who claim a medical man has no right to take any part in the management of public affairs. Such persons prate much of the dignity of the profession, and affect to think that it is wonderfully derogatory to their professional standing ever to take the least interest in political subjects. Of course I do not mean that you should become professional politicians, but, by taking a proper interest in legislative and governmental affairs, you do no more than is required of all good citizens. Moreover, by performing well your duties in this respect, you may become of inestimable service, not only to the State, but also to the medical profession, for, by your influence in the body-politic, you have the opportunity of promoting the supreme interests of that profession.

As medical men you will be called upon to GIVE EVIDENCE IN COURTS OF JUSTICE

Upon matters relating to murder, insanity, and subjects with which your profession renders you peculiarly conversant. It is your duty to respond to the subpæna from the lawfully constituted authority in such cases, and when testifying as an expert witness, equity, if not law, demands that you receive a fee commensurate with the value of your medical opinion. The question of allowing

EXTRA FEES FOR EXPERT WITNESSES

Has long been a vexed question. Experts in science, in mechanics, and in medicine especially, have always been extremely jealous of their supposed rights in this respect. Yet old as is the question, often as it has been discussed, never until within the present week has it been decided

in the higher American Courts.

The Supreme Court of Alabama has recently decided adversely to the medical profession upon a question similar to, though not identical with, the one under consideration. But it has been reserved for Indiana to be the first State in our Union to do justice to the medical profession in this respect. This very week the Supreme Court of that State decided that "a medical expert can not be compelled to testify without compensation." The case originated in the declination of Dr. A. B. Buchman (who, by the way, is a graduate of this college) and Dr. Dills. both of Fort Wayne, to give expert testimony without compensation. The Court below being of the opinion that a professional witness is required by law to answer questions without compensation other than ordinary witness fees, and these gentlemen persisting in their refusal to answer, they were committed for contempt. From this commitment the witnesses appealed to the Supreme Court, and won their case.* Their success is a fitting trib-

In this case, 6,764, Alpheus B. Buchman, vs. The State of Indiana, Allen Criminal Circuit Court, Judge Worden announced the opinion of the Court,

of which the following is a brief abstract:

^{*}A few days subsequent to the date of this address, a more complete report was received.

For this courtesy I am indebted to Gabriel Schmuck, Esq., Clerk of Supreme Court, Indiana. Only a condensed abstract of the opinion is given. The original is very lengthy, referring to numerous authorities, and is too elaborate to be here reproduced.

[&]quot;A physician or surgeon, in respect to facts within his knowledge, stands

ute to their pluck and perseverance—an honor, too, to the members of the profession of that State who contributed aid and sympathy toward the attainment of so desirable a result.

We have therefore gained a great advantage, and we trust that the medical profession of other States may fol-

upon an equality, in reference to compensation, with all other witnesses. But can be be compelled to give a professional opinion without compensa-

tion, other than the ordinary witness fees?

"In England there is some diversity in the decisions in respect to the question whether an attorney or medical man is entitled to higher compensation, for attendance as a witness, than ordinary witnesses. This diversity, however, relates to witnesses required to testify to facts, and not to give professional opinions. In respect to professional opinions, we are not aware of any diversity of decision.

"A witness, selected by a party to give his opinion on a subject with which he is peculiarly conversant from his employment in life, is not bound, as a matter of public duty, to testify, and the party who selects him must pay him for his time, before he will be compelled to testify.—1 Car. and Kir. 23; 1 Sprange, U. S. 276; 13 Abb. Prac. Rep. N. S. 207; Ordronaux Juris Med. §114; 2 Phil. Ev. 4 Am. Ed. 828.

"We proceed now to test it by the Constitution of the State. Section XIII. of the Bill of Rights, provides that 'no man's particular services shall

be demanded without just compensation.'

"Under this provision of the Constitution, this Court then held that the Court could not demand the professional service of an attorney without compensation. 4 Ind. 525. If the professional services of a lawyer can not be required in a civil or criminal case without compensation, how can the professional services of a physician be thus required? Is not his medical knowledge his capital stock? Are his professional services more at the mercy of the public than the services of a lawyer? When a physician testifies as an expert, by giving his opinion, he is performing a strictly professional service. The purpose of his service is not to prove facts in the cause, but to aid the Court or jury in arriving at a proper conclusion from facts otherwise proved. All attempts to make a distinction between attornevs and physicians are frivolous.

"If physicians or surgeons can be compelled to render professional services, by giving their opinions, on the trial of criminal causes, without compensation, then an eminent physician or surgeon may be compelled to go to any part of the district or State, at any and all times, to render such services, without other compensation than such as he may recover as ordinary witness fees, from the defendant in the prosecution, depending upon his conviction and his ability to pay. This, under the general principles of law, and the Con-

stitution of the State, he can not be compelled to do."

Also, 6,758. Thomas J. Dills vs. The State of Indiana. Allen C. C. Re-

versed.

The opinion in each of these cases is concurred in by Judges Worden, Perkins and Howk, and dissented from by Judges Niblack and Biddle. Of course, had the decision been unanimous, it would carry with it much more force as a precedent. Or, had it been given by the supreme tribunal of certain of our Eastern States, it might, in the opinion of some, be entitled to greater weight. Although it may not, in future decisions of the question, be considered binding as a precedent, yet it will go a long way toward influencing the Courts in favor of justice to our profession.

low it up, securing equally as favorable results, and that soon it may be universally known that when a party to a suit calls an expert, he must pay him. When that desideratum shall have been reached, attorneys will not ask skilled testimony for their clients so frequently as has been their custom.

As physicians, you will dispense liberally your services to the poor. You will also give without charge your attentions to other members of the profession, and to their families when in need of them. But there is a limit to your charitable work. You are under

NO OBLIGATIONS TO TREAT THE CLERGY WITHOUT CHARGE,

Nor members of any other profession or occupation except the medical. Formerly, more than at present, physicians were in the habit of treating gratuitously clergymen and their families. Clergymen are, upon an average, paid as liberally, for the amount of work they perform, as doctors, and are just as able to pay their honest obligations. Because they are dead-headed so often for public conveyances and entertainments, constitutes no reason why they should be dead-heads on the medical profession; nor, in justice to them, do I believe that they, any more than any other class, desire to receive our services without paying for them. It is not so much their fault, as the fault of others, that they are so often made the recipients of things for which they make no proper payment.

There is one obligation of the public to physicians to which I ask your special attention. Every reasonable facility for the acquisition of medical knowledge should be afforded by legislative enactments, and in no State should such knowledge be exacted, and yet that State withhold the only means by which such information can be obtained. I refer to the laws, which exist in certain States, prohibiting the procurement of material for the study of human anatomy, under the severest penalties. As well take the book from the child, and demand that it learn its lesson, as take from the medical student the opportunity of dissecting, and then demand from him a knowledge of the human system. Not many years have elapsed

since a law was passed to

LEGALIZE DISSECTIONS

In our own State. It is so hedged about with provisos

that very imperfect facilities only are afforded. And even these, meager as they are, are threatened by some ignorant legislator at Columbus, who, during this month, has introduced a bill to repeal the act in question.* That wonderful law-maker, whoever he may be, should have lived in the twilight of the middle ages, for this progressive age of ours can not appreciate his efforts to throttle science, and thereby the welfare of the public.

CONVERSATIONS WITH YOUR PATIENTS

are, by our code of ethics, forbidden to be reported to others; and, in general, the less you have to say about your patients, the better for you. Cases sometimes present in which perfect secresy on your part is imperative. And your obligation of secresy does not terminate with the cessation of your connection with the case. It is perpetual. But right here our ethics run counter to the common law, and by that law "there is no doubt that the medical witness is not only bound, but may be compelled to give evidence." The French, however, are more chivalrous than we, and it is questionable whether, in France, tribunals of justice have any right or power to compel a physician to reveal a secret confided to him in consideration of his office.† But this does not avail, for the rulings

* HOUSE BILL, No. 216, BY MR. WRIGHT,

[&]quot;To repeal an act entitled 'An act to encourage the study of anatomy.'
"Whereas, By the laws of this State the bodies of criminals, executed for heinous offenses, unless said criminals are poor and friendless, are entitled to decent burial; and

[&]quot;Whereas, Poverty is no crime, and the poor, honest, friendless man, in life, and in death, should be before the law the equal at least of the depraved criminal; and

[&]quot;Whereas, By the laws of this State the bodies of deceased and unclaimed poor are authorized to be given over to certain colleges and schools for dissection; therefore,

[&]quot;Section 1. Be it enacted by the General Assembly of the State of Ohio, That an act entitled 'An act to encourage the study of anatomy,' passed March 25, 1870, be and the same is hereby repealed.

[&]quot;SECTION 2. This act shall take effect and be in force from and after its passage."

[—]For a specimen of demagogism this bill is unrivaled. Of course there is sufficient intelligence among the members of the Legislature to prevent its passage in its original shape. There is danger, however, that the rights of the medical profession upon this subject will be abridged by the passage of a bill less sweeping in its provisions; indeed, such enactment (H. B. No. 221, by Mr. White) has already been proposed.

⁺ That able French writer, Belloc, says (Cours de Med. Leq. 17): "The tribunals neither ought nor have the power to exact from a physician the revelations of a secret confided to him in consideration of his office."

of our courts are derived from the English common law, which, as I have intimated, may compel us to disclose professional secrets when the ends of justice demand them. Fortunately, in many of our States, there are special laws upon the subject, relieving physicians from the disagreeable necessity of disclosing in Court under compulsion the secrets which may have been confided to them by their patients.* But in most States, where this advanced legislation has been effected, it is distinctly provided that "the confession of the patient, in order to be protected against disclosure, must relate exclusively to such matters as are indispensable to the professional treatment of the patient. Confessions made outside of this sphere acquire no immunity from having been intrusted to physicians."

Gentlemen, you will find that medicine, in some of its various departments, inpinges upon nearly everything within the whole circle of science. Chemistry, geology, meteorology, botany, are all, to a greater or less extent, associated with the medical art. Nor can we pursue very far the study of diseases of the mind without entering the domain of metaphysics. Turn we our view to surgery or obstetrics, and we find that soon we reach the boundary of mechanics. So, too, does the science of medicine blend with law, and law and medicine have many things in common. The science of medicine originated in consequence of the physical infirmities of our nature, while law arose from our moral infirmities. It is useless to speculate as to which profession is entitled to the greater antiquity. Perhaps both can properly date their origin to the time when man began to people our planet.

The benefits accruing to mankind from the medical profession are numerous, important and incalculable. Dark and devious as are the ways of crime and criminals, stealthy and secret as are the steps of the poisoner and assassin, yet there are few cases of crime on which the science of forensic medicine can not throw a flood of light. No medical man, engaged in actual practice, can be certain that he may not be called upon ere the day is out, to decide some question relating to crime. \(\psi\) In such cases his first aim should be, not to distinguish himself in the

^{*}Such laws are in existence in the States of Arkansas, California, Indiana, Ohio, Michigan, Ibwa, Missouri, Minnesota, New York, Wisconsin, and perhaps in some other States.

† Woodman and Tidy, Forensic Medicine and Toxicology, p. 1054.

witness-box, "or in the columns of the daily press, but to discover and confirm truth. It is truth in facts, and truth in words, which will, on the one hand, lead to the conviction of the guilty, and, on the other, to the acquittal of the innocent."

Another topic of peculiar interest presents itself in its sanitary aspect. It bids fair, also, to become a subject of medico-legal interest. I refer to

CREMATION,

A subject which has lately attracted unusual attention. Originally, the method of disposing of the dead was a matter of purely ecclesiastical jurisdiction. Subsequently it was subjected to legal restriction, and it is a question worthy of consideration whether to burn the dead is not in contravention to our common law. Ancient as is the custom, we are informed by Cicero (De Leg. II. 22) that burial in the earth is our more ancient. Incremation was, in the early ages, practiced to a considerable extent in certain portions of Greece, in the north of Europe, and among the Romans. Probably the custom originated in the animosities and inhuman treatment engendered by wars between tribes and nations. And from the Bible we learn that Saul was burned at Jabesh, and Asa was burned in the bed which he had prepared for himself, redolent with sweet fragrance and many spices. Medical men, from the very nature of their profession, are prepared to discuss this question with freedom from prejudice. And it is a question which, sooner or later, is likely to compel thoughtful consideration. Heretofore it has not received from the medical and scientific world the attention merited, but at least a partial abandonment of our usual method of burial may yet be compelled where dense city populations are likely to be injuriously affected by poisonous emanations from the dead. At the ratio in which the population of our globe has been increasing during the last few centuries, the time will come when it can not support its teeming billions of inhabitants. Already the cemeteries of London—the world's metropolis—have become so crowded that it is more difficult to find place for the dead than the living. "Overfilled churchyards and burial grounds are nuisances to the health of their neighborhood," and as such the law compels their removal. During a period of six centuries, over six hundred thousand bodies

were buried in the churchyard of St. Innocens, in the city This cemetery comprised but two acres of of Paris. ground. The deleterious effects upon the living were so serious as to compel removal of the cemetery. I may also refer to the effects produced upon the health of the laborers who were engaged to remove the bodies of the recently deceased Bourbons from the tombs in St. Dennis during the historical Reign of Terror. Instances could be multiplied indefinitely, if necessary, to show the injurious effects upon residents of great cities from overfilled cemeteries. "And yet," in the language of an eminent medicolegist, "free as we boast ourselves to be from the prejudices and superstitions of our ancestors, I question whether there is any point upon which more popular clamor would be raised than that of changing our system of burial." I do not argue either for or against cremation. It is my province only to speak of the public health in relation to burial. Nature has implanted in the human breast a sentiment of veneration for the dead whom we loved in life, and noble as is that sentiment in itself, I yet do not hesitate to say that we must not allow it to prevent us from guarding the living from dangers to which they may be exposed by a mistaken regard for the dead.*

And now, gentlemen, a word or two yet of counsel before we separate. Recollect that from the nature of your duties, you will be brought into more frequent, close, and intimate relations with the members of society than the representatives of any other profession—not even the priesthood excepted. Keep pure. By immorality you can never gain the respect of your patients. This can be obtained only by your reputation for moral excellence and skill. No scientific attainments, however great they may be, can compensate for the want of correct moral principles. Of this will you be better satisfied when you shall have reached the sunset side of forty. It is your duty to cultivate morality and the study of medical science. They should go hand in hand. You should be moral, if not for the sake of virtue itself, then for the good name of the profession. Rest assured that society will weigh, and finally estimate you correctly. Do not be in too great

^{*}For the benefit of those who care to study the subject of cremation, I will add that I know of no book which contains so much curious information upon that topic as a little volume entitled "Religio Medici, Hydriotaphia," etc., by Sir Thomas Browne, an author of the seventeenth century.

haste to obtain a practice. There is no short-cut to fame, no royal road to success; and the sooner you realize this truth the better. There are many who "run well for a season," but are outstripped in the race by others whom they had pretended to despise for their plodding diligence. It was a favorite maxim of that great mathematician, the lamented Charles Davies, that "what is learned with ease is remembered with pain, and what is learned with pain is remembered with ease." So it is in our profession. A practice obtained with ease is generally difficult to keep; a practice gained with difficulty is retained with ease. Finally, gentlemen, study to

KEEP ABREAST THE PROGRESS OF MEDICINE

As a science. Do not, if you could, read everything that claims to be scientific medicine. Daily in the literature of our profession is there more and more trash. In medicine, as in general literature, there are three kinds of books. One kind is not worth reading at all; another "is to be read and put away; but the third is put away to be read. This latter is the kind that will give you most strength for the conflict you have chosen.

Relation of Tuberculosis to Scrofula.

BY DR. L. THAON, OF NICE.

Translated and Condensed from "Le Progres Medical" of January 12, 1878, by R. B. Davy, M. D., Cincinnati, Ohio.

After many controversies, the dualistic theory of tubercle appears to be definitely abandoned. The other one, or theorie uniciste of Laennec, has been preserved by the power of French clinicians. It has been rejuvenated by the works of our histologists, Ranvier, Cornil, Grancher, Thaon and Melessez. It has again become classic, thanks to the learned lectures of M. Charcot. In diverging from this solid basis, certain problems may be touched upon whose solution has been wisely reserved until this day.

Among the complex questions which tuberculosis presents to us, there is none more vexed than that of its relation to scrofula. Lugol, Graves and Lebert held that phthisis was nothing else but scrofula of the lung. Morton, Milcent and Bazin described a scrofulous phthisis.

depending on proper and independent characters of ordinary phthisis. Pidoux confines himself to the belief that scrofula furnishes to phthisis a greater number of subjects than other diseases. Virchow makes of caseous pneumonia the symptom of scrofulous pneumonia. How can we choose in this labyrinth of opinions, and what

shall we do among so many theories?

organs.

Until now, it has been in studying the anatomical characters of scrofulous glands, which constitute the type of strumous affections, and in placing them in opposition to the lesions of the tuberculous lung, that writers have decided on the identity of the two phases of the disease, or of their more or less absolute difference. It is in following the same method that we wish to clear up our judgment. But this time we touch upon the subject with well defined ideas on tubercle and caseous inflammations; and we are able (thanks to a better acquaintance with the histology of the gland) to proceed more easily in the anatomo-pathological study of these complicated

The glands are believed by everybody to be tubercular. These are they which are met sometimes in consumptives in the region of the larger bronchi and their subdivisions. They present a surface of small round nodules, contrasting with the rest of the parenchyma by their grayish-red and yellowish color, and their exact circumscribed form. Authors are inclined to look upon these nodules as tubercular granulations of the glands, but for fear of confounding everything they hasten to certify that their existence is quite rare. Barthiez and Rilliet have found this lesion only sixteen times in two hundred and forty-nine consumptives afflicted with degeneration of the glands. We can add, also, that in our numerous autopsies, we have seldom seen tubercular granulation of the gland with such well-marked microscopic characters.

Since people are so ready to designate these glands as tubercular, let us hasten to look into their structure, and find out from their histology the characters which will enable us to recognize them as tubercle, either in the case of their being masked by complex products, or becoming apparent in a superficial examination. A section of the glands lightly enlarged shows the elementary granulations considerably multiplied. The field of

the microscope is full of them. The tubercles seen with the naked eye appear, when magnified, like the aggregates of elementary granulations. These are the conglomerated tubercles. By the side of them is seen a crowd of small isolated granulations, which, at this feeble power, appear as slightly opaque points on a bright surface.

After hardening with picric acid, and coloring with picro-carmine, beautiful preparations are obtained, certain portions of which are very well colored, such as the healthy parts of the gland, the follicles and cavernous system; others, such as the elementary granulations, are paler; and still others, as granulations a little old, are quite colorless. In this preparation the granulations contain a great number of elements of very variable dimensions. There are large cells with several nuclei, small embryonic cells, and between them all kinds of intermediate ones. To him, who has seen the elementary granulations of the epiploon, the resemblance is striking. These elements are grouped around a beautiful large circular figure, showing a central granular mass colored yellow by the reagent, and bordered by a narrow band of ovoidal nucleated cells. This is the so-called giant cell. By the aid of these characters we can distinguish the granulation of the surrounding tissue, and separate it from the lymphatic cells which fill the normal gland tissue throughout. Moreover, it appears that one of the first effects of the granulation is to disperse the lymphatic cells; for the gland appears visibly less rich in elements of this kind in the neighborhood of the tubercle.

On treating the sections of the gland with the brush before coloring them, the network about the granulations is seen to be preserved, but the trabeculæ are thick and granular. On certain of the trabeculæ are seen large cells with several nuclei; there are also some in the tissue layers, mixed with other smaller ones.

Thus the development of granulation takes place in the gland as on the trabeculæ of the epiploon, by multiplication of endothelial cells.

In both regions, granulation, in its state of complete development, is formed by a great number of embryonic cells mixed with larger ones, and arranged in a small round point. The brilliant giant cells are also present,

and even quite numerous and more distinct than elsewhere.

The most advanced periods of granulation are in fatty and fibroid degenerations, which offer nothing in particular in the gland. The reticulated web of the lymphatic tissue disappears on the caseous points by becoming hypertrophied and transformed into fibrous tissue around them, where it forms the necessary envelope of the old

granulations or granulations of Bayle.

By the side of these manifestly tuberculous glands that we have just described, there are a great many others whose tubercular nature is doubted by many authors. They are rather looked upon as scrofulous. The glands more or less hypertrophied, present, on section, nodules of gray substance varying in size from a hemp-seed to a large almond, or even occupying the entire gland; oftenest, the same gland is interspersed with islets of a whitish or yellowish color, and, on section, presents the appearance of variegated marble. Now let us see if we will find in these glands some of the distinct characters of tubercle.

The same sections and the same manner of preparation show still in the structure of these gray nodules, giant cells, proliferation of the endothelial cells of the stroma, groups of embryonic cells; in a word, all the elements of granulation without a single exception; but the granulation is no longer isolated or circumscribed in islets, it is infiltrated through a great part of the gland—it has assumed the form that it takes so often in the bones, lungs, testicles and kidneys. This is always tubercle which is thus seen, but tubercle of unusual features, by which it escapes the far too exclusive definition given by Virchow.

This large tubercle degenerates like simple granulation. It undergoes the caseous softening, and is eliminated exteriorly toward the skin, or more deeply, by the bronchial tubes. But it can also undergo the fibroid degeneration toward its exterior, and be confined by a barrier of fibrous tissue.

Thus there is no essential difference between this gland, and the one we described previously, so that we do not see why it should be considered purely scrosulous and not tubercular.

In following our researches, we come to a third variety

of glands, which it is necessary to submit to the same analysis. They are met in rather young subjects who have, so far, not presented any signs of tubercle or scrofula. They appear in the form of voluminous masses, which can attain the volume of the head of a fœtus, and are seated preferably on the lateral aspect of the neck. They are spheroidal in shape, flattened or irregularly quadri lateral, indolent, possess a variable consistence, often different at different points of their surface, elastic, deeply embedded in the muscles, and not adherent to the skin.

Among the numerous glands which compose this large mass, some, cut perfectly smooth, have a grayish color, are uniform, and present to the microscope all the degrees of interstitial inflammation; others present almost the same character to the naked eye, but to the microscope show centers of fibrous degeneration, and zones where there remains nothing of the lymphatic tissue but the meshes of the reticulum singularly enlarged and filled with large granular cells; others present islets of caseous matter, veritable granulations with their embryonic cells, their giant cells; and, finally, there are some which are perfectly caseous.

Why is this great diversity in the lesions? It is probably favored by the tardiness of the process, a condition which causes a predominance of fibrous tissue in these degenerated glands; but the anatomical signature—tubercular granulation—is always there. Are these gland masses tubercular? Yes, as much so as the complex lesions found in the lungs of certain consumptives, comprising induration, caseous nodules, granulations of Bayle,

and ordinary granulations.

Pathological anatomy has just spoken, to the effect that the type of strumous affections—scrofulous glands—should be considered as belonging to tubercle. There are a great many other affections, that, till lately, were considered as purely strumous. There is strumous orchitis, which Melessez and Reclus have reduced definitely to tuberculosis. There are even the so-called scrofulous nephritis, scrofulous disease of the brain, meninges, pleuræ and peritoneum. Phthisis, in its turn, has not escaped this comparison. What is caseous pneumonia, or the scrofulous pneumonia of Virchow, if not a tubercular infiltration? Our researches, confirmed by M. Charcot, have shown that in pulmonary phthisis everything is

tubercular, with the exception of the neighboring irritative lesions, catarrhal and interstitial. What does clinical knowledge teach us on the same subject? It shows us the clinician distinguishing a scrofulous phthisis, and assigning its proper characters to it far in advance of the pathological anatomist. Frank, Morton, Milcent and Danjoy declare this phthisis recognizable by its slow march, its abundant expectoration, the absence of fever and hemoptysis, and by a manifest disagreement between the very extensive local changes, and the hardly appreciable general reaction. This essentially scrofulous phthisis has not been accepted without a reply. Herard and Cornil are fighting it with determination. It is even curious to see, they say, that the examples of this form furnished by authors are just the cases whose progress has been rapid and quickly mortal. Our personal experience, in a position where we treated consumptives of all countries, shows us how great is the resistance of certain consumptives of slave origin, who present all the attributes of scrofula; but that is far from admitting a separate clinical form that could be designated as scrofulous phthisis. Wherever it is implanted, or whatever be its march, phthisis is the same.

Thus you can merge a multitude of the so-called strumous affections into tubercle, but by such a proceeding you are only magnifying tuberculosis at the expense of scrofula, or simply changing the reciprocal domain of the

two affections.

It now remains to be seen whether a third opinion is not the most probable—that which claims the identity of the two diseases, and fuses the two diatheses into one. If this hypothesis does not reconcile all the facts, it serves,

at least, to connect them.

Since the lesions of scrofulous glands are identical to those of tuberculosis of the lungs, and the gland enlargement is the most undeniable manifestation of scrofula, it follows that pulmonary phthisis is also scrofulous. According to this view, it is no longer caseous pneumonia, which is scrofulous, as Virchow has remarked—it is phthisis as a whole, which partakes of this nature. This opinion was warmly sustained by Lugol, but he immediately met a crowd of dissenters. Lugol argued that scrofula and tuberculosis mutually reproduce themselves by heredity. People refused to combine tubercle and scrof-

ula in a single disease; they did not dare to disturb the tubercle and the tubercular diathesis created by the genius of Laennec. Clinicians objected to the statement that if a great number of consumptives were scrofulous, a much greater number were not so; as if a general constitutional disease could not be incomplete, and as if its localizations should always be regulated in a pre-established manner, and appear in the same order of succession. We are not ignorant of the fact that scrofula shows itself, in the first place, under certain benign forms, affecting the skin and mucous membranes, which give place afterward to graver manifestations, such as ulcerations of the coverings; and, finally, to invasion of the viscera. But what exceptions and deviations are found in this established march? One individual will have a lupus appearing on the face as the first manifestation of scrofula; another will have glandular enlargements of the neck, and a third an infiltration in the testicles or lungs.

Scrofula can be incomplete, and manifest itself by the gravest lesions from the first, whether the skin or viscera be implicated. Its localizations can be determined by occasional and insignificant causes. Thus impetigo appears on the lobule of the ear which has just been pierced. a scrofulous gland shows itself on the neck of the soldier after being chafed by the collar, and infiltrations of the lungs take place promptly in the mechanic after respiring irritating dust. This predisposition to a determined localization can be transmitted by heredity, so that a consumptive—that is to say, a scrofulous individual with pulmonary localization—can give birth to children, who, in their turn, will succumb to pulmonary infiltration. Cancer offers us analogous examples. We know that it can show itself for several generations in the same organ, as

in the stomach or breast.

When a new theory is advanced, it is difficult to withstand the numerous objections which arise. Among the number there is one which is considered capital. Physicians who study medical geography have remarked that scrofula and tuberculosis do not always invade the same countries, and that scrofulous subjects are found at altitudes where phthisis has entirely disappeared. They have noted that scrofula is very abundant in the Hartz Mountains, Sardinia, Bengal and other countries where phthisis is relatively rare. All this proves to us that in

these countries the bad hygienic conditions in which the poor wretches live, including their nourishment, is sufficient to provoke scrotula, but falls short of that indefinite something which causes a determination to the lungs under the form of phthisis; other conclusions can not be drawn from these facts.

It will be said yet that the desire to merge tuberculosis into scrofula is to forget the teachings of experimental medicine which has affirmed the existence of a tubercular virus, inoculable to several kinds of animals, and which can not emanate from a simple scrofulous taint. We will reply in protesting our admiration for the beautiful experiments of Villemin and Chanveau, but in declaring that they can not prove that human tubercle is virulent or transmissible by contagion.

After having, in our previous works, brought our modest tribute to the reconstruction of the unitary theory of tubercle and scrofula, we add to-day that this theory has nothing improbable about it, and more than one argument in its favor is found in pathological anatomy.

Therapeutical Notes.

BY CHARLES REED, M. D., CINCINNATI.

THERAPEUTICS OF IODOFORM .- Iodoform, the feriodide of Formyl (C. H. I. 3), was first described by Lerullas in 1822; remedially employed by Dr. Glover seventeen years later, and introduced into our pharmacopæia in 1870. I have treated several cases of ulcers, both specific and non-specific, with iodoform. One case—that of a young man twenty-three years of age-had two indurated chancres just back of the glans, with slight induration of the right inguinal lymphatics. The chancres were cleansed and pricked till there was some slight oozing of blood; powdered iodoform was then dusted on them by means of a camel's hair pencil, and the same remedy was administered internally in the form of an oleaginous solution-a grain and a-half of the iodoform being given at a dose, repeated thrice daily. In three days the patient again presented himself, the chancres looking very clean and healthy, as well as diminished in size, the inguinal duration having entirely subsided. The only unpleasant symptom complained of by the patient was nausea, that appeared to

be induced more by the offensive aroma of the drug than any irritant action that it exercised upon the stomach. The local application appeared to be particularly gratifying as it allayed the undue sensibility of the affected part. The balance of my experience with this drug, in the treatment of syphilic affections, is confined to primary series, all of which I have found to yield kindly to the treatment as indicated in the case just given. There is a set of syphilitic cases that I have usually found it quite difficult to control, viz: of repeated infection. I think it can be taken as a rule that a syphilitic subject becomes less amenable to treatment on each repetition of the infection. Cases, I find, yield to the iodoform treatment more readily than to the old treatment of caustics and mercury, or alkaline iodides. I have treated a number of cases of indolent skin ulcers with this remedy, and find them taking a healthy action under its influence. In these cases I first have the ulcer thoroughly cleansed, and apply the iodoform by first sifting it over a rag covered with cerate, and then putting the iodoformed surface of the rag to the ulcer. This treatment I always accompany by bandaging the limb. It is stated by authorities generally that iodoform has no irritant properties, but that on the contrary it is an anæsthetic. This statement should be qualified. When applied to the surface of an ulcer it first occasions a needles-and-pins sensation; when a drop of the aqueous solution is dropped on the compuncture it occasions infection of that membrane along with profuse lachrymation. When applied to mucous surfaces it first occasions unpleasant symptoms of irritation, which are rapidly followed by offended sensibility. It would be difficult to account for its stimulant action in indolent ulcers without accrediting to it some degree of irritant power. Yet the local anæsthetic power of iodoform gives it an important range of utility. I have used it in several cases of hemorrhoids in which defecation always occasioned excessive pain. Given in these cases in the form of a suppository, it occasions a decided amelioration of the pain. Did the morbid condition of these cases reside exclusively in the rectal mucous membrane, we might experience more complete relief; but as it is, iodoform serves a better purpose than morphia given per rectum. There is danger, however, in the too free or long continued use of iodoform in the milder class of these cases, viz: by inducing paralysis of the

peripheral sensitive nerves of the rectum, in consequence of which defecation may take place without the consciousness of the patient. It may be remarked, however, that this unpleasant condition is only temporary, and subsides

with the withdrawal of the remedy.

From an article by Berkeley Hill, F. R. C. S. (British Medical Journal, January 26, 1878), it appears that the use of iodoform, in the treatment of syphilitic sores, is a new practice in England. Mr. Hill gives us some valuable hints relative to the application of the remedy. He prepares it in the form of a solution of one part of iodoform to six of ether, which he applies to the sore by means of a camel's hair pencil; the ether evaporates, leaving a crust of iodoform covering the ulcerated patch. "When the secretion is abundant, the dressing must be removed twice daily; but, in three or four days, the amount of discharge becomes so scant that one dressing per diem suffices." We have been in the habit of dressing the sores with the dry powder, but Mr. Hill's method is preferable.

Internally, iodoform has proven a beneficial remedy for syphilitic sequelæ, and when given in the dose of a grain and a-half, made into a pill with the extract of gentian, is borne by the stomach quite as well as the potassic and other iodides. Three cases, where the dorsum of the tongue was covered with rugged epithelium, which it was constantly fissuring and ulcerating, had been treated for years with the alkaline iodides without success, readily yielded to iodoform. In a case of "ulcerated and protruding gumma of the left testis, non-ulcerating gumma of the right testis, and ulcerating gummata of the skin over the upper ends of the right tibia, with other syphilitic affections" yielded to iodoform after the treatment had been carried to iodism. Dr. Edward Woakes testifies to the efficiency of iodoform in cases of rhinitis ozæna-postnasal catarrh, and hyperplastic products, whether simple or syphilitic; he applies the remedy in the form of iodoform. ed cotton (a drachm of the cotton containing a drachm of the iodoform), a small pellet of which he passes up into the nasal cavity by means of the probe. The remedy, he says, may remain for twenty-four hours without occasioning any inconvenience. Dr. Lennox Browne used the same remedy in the same class of cases, but applied the ether solution. He also uses it mixed with vasiline, which is applied by means of a brush far up each nostril.

ON QUINETUM AND ITS THERAPEUTICAL VALUE. - Dr. H. J. Vinkuysen, physician to the King of the Netherlands, reports (the Practitioner, February, 1878) a number of cases illustrating the therapeutical value of quinetum, a name given by Dr. De Vry, of Holland, "to the collective alkaloids obtained from Peruvian barks by a very simple process." Through the influences of the last-named gentleman the remedy has been extensively used at The Hague, and throughout Holland. Dr. Vinkuysen has prescribed it in a hundred different cases, a few of which he reports. In one case, a lady, afflicted with tertian ague, was intolerant to even small doses of quinea, which occasioned, along with the usual ioxic symptoms of that drug, præcordial anxiety and asthma. Hydrochlorate of quinetum was given without any unpleasant symptoms, but was soon followed by a subsidence of all febrile symptoms. One case of facial neuralgia was promptly relieved by quinetum, which produced no hallucinations of hearing as did quinine. Holland is peculiarly a country of malarious intermittents, but the effects of malaria are manifested also in connection with other forms of disease. "Affections of the most diverse kinds, which are connected only by having the malarious poison as a common cause. Here quinetum was found more potent than quinine." From his experience with the salt, Dr. Vinkuvsen draws the following conclusions:

1. "The only malarious diseases in which quinetum can not be employed in place of quinine, is pernicious fever. Quinetum requires more time to act than quinine, and as rapidity of action is absolutely necessary in this disease, quinetum can not be used in it as a substitute for quinine.

2. "In all forms of pure malarial intermittent fever, quinetum has the same apyretic effect as quinine, but is less powerful and acts more slowly. It must therefore be given in larger doses, and at longer intervals before the ague fit, than quinine.

3. "Quinetum does not produce the unpleasant and even dangerous symptoms of quinine, when given during the fit, and may be taken during the fit without producing any unpleasant feeling.

4. "Quinetum never causes noises in the ears.

5. "Persons who are liable to suffer from toxic effects of quinine, and who, therefore, can not take it without the greatest discomfort, can take quinetum without this

unpleasant effect, and yet obtain a similar therapeutical result.

6. "The influence of quinetum in chronic cases is greater than that of quinine."

7. "The tonic action of quinetum is similar, and per-

haps even greater, than that of quinine.

8. "The action of quinetum in cases of masked or larval malaria, and especially in rheumatic affections due to malarious influence, is incomparably greater than that of quinine."

Quinetum also brings down the temperature. In petecchial typhus, at the tenth day three grains of quinetum were given with the temperature at 41° C., which, in two hours, was reduced to 38°.2 C., with no diagreeable symp-

toms.

JABORANDI AND SALICYLIC ACID IN RHEUMATISM.—Dr. John Hill, of Senecaville, Ohio, reports to the Guernsey County (Ohio) Medical Society (Ohio Medical Recorder, January, 1878) the case of a man of twenty-five who had had several attacks of acute articular rheumatism, the last of which was successfully treated with salicylic acid and jaborandi. There was accelerated pulse, with temperature at 103° F. and cardiac complications. Began treatment with ten grains of salicylic acid which temporarily relieved the articular inflammation and brought the pulse down to 70 and the temperature to 102° F. within the first six days, subsequent to which the acid exerted no further influence over either the pulse or temperature. The salicylic acid was discontinued and jaborandi was given, which produced profuse salivation and diaphoresis, decline of temperature to 101°, and pulse to 72, and amelioration of the symptoms generally, resulting in convalescence and cure of the patient.

THE Medical Record furnishes the information that the directors of a public library in Kansas have warned society against the danger of contagion through books, and insist that none such be returned to the library when used by a person with contagious disease, until such books are properly disinfected. During the prevalence of an extensive epidemic no books are allowed to go out.

EUCOLYPTUS GLOBULES.—This remedy has been tried in the hands of Benjamin Bell, F. R., C. S. E., for the purpose

of allaying irritability in the stomach in evident malignant ulceration of that organ, with marked success. reports (Edinburgh Med. Journal, February, 1878) several cases of this kind. A gentleman-æt. 75-had suffered for ten years with malignant ulceration, and at intervals of a fortnight or less was compelled to unload his stomach of a sour burning fluid by vomiting, in which acts he sometimes ejected blood. Light and vigorous self-denial and tincture of eucolyptus, twice daily, has effected a decided amelioration of his condition. Another case presented symptoms of disease of the stomach, and probably the colon, and received marked benefit from the same treatment. Another case of a female with ulceration or some other organic disease of the stomach unexpectedly recovered from extreme attenuation and weakness under similar treatment.

Dr. Bell has tried the remedy repeatedly, in cases of evident organic disease of the stomach, with clearly manifest subsidence of distressing symptoms, but he says: "Of course no one will think of using the medicine as a specific in any case where it may seem to be indicated. All the details as to diet and general regimen, which would be deemed necessary without it, must be carefully attended to." He thinks it useful in diphtheria commencing in the gullet and ascending to the fauces, and may be of use in typhoid fever.

Sayre's Plaster Jacket Improved.

ROCHESTER, N. Y., January 14, 1878.

J. A. THACKER, M. D.—Having heard and read so much of Sayre's Plaster Jacket for the treatment of curvature of the spine, and the wonderful benefits obtained by that mode of treatment, the thought occurred to me, during the past summer, that strong manilla paper (which I had employed for some time as a dressing for fractures with the most satisfactory results) might be used in the place of plaster.

Having an opportunity to test it in a case of Potts' disease of the spine, I did so. The patient was then twenty-three months old, and had never been able to walk or even creep. After drawing the patient up with Sayre's harness, I placed on the child a close-fitting wrapper (the

same as is used in the plaster jacket), smearing this well with book-binder's paste in which a considerable quantity of alum had been dissolved for the purpose of making it dry more rapidly; then applying strips of paper from three to six inches in width, passing them entirely around the body, and applying a sufficient number of layers with paste to retain the spine in position; then having a plaster of paris roller in readiness, I dipped this in water and hastily applied it over the paper jacket, making three or four turns of the roller; this held the spine in position until the paper was thoroughly dry, which took about thirty-six hours; at the expiration of that time I removed the plaster of paris roller for the sake of cleanliness, and applied two more layers of paper, which made a clean close-fitting jacket. Three days after the application of this jacket, the child was able to stand alone, and three months afterward the child was able to walk without support.

The advantages which I claim the paper and paste have over the plaster of paris are, first, it weighs only about one-eighth as much, and, secondly, it is cleaner and much more comfortable, and can be cut open, the skin sponged, and the jacket be applied again and held in its place by

two or three more layers of paper and paste.

Yours respectfully, M. R. SPEARE, M. D.

SELECTIONS.

How to Measure the Magnifying Power of Microscopes and Telescopes.

THERE is probably no class of observations in which the senses are so likely to be deceived as in estimating the magnifying power of microscopes and telescopes. It is not uncommon to find lenses of moderate powers condemned, on the one hand, as greatly less powerful than they really are, and, on the other hand, extolled as something wonderful. Thus we see in our streets cheap microscopes, of very moderate power, advertised as the most extraordinary instruments, because they show the eels in paste; while just as often it happens that really good microscopes, of much higher power, are condemned as

weak, because, having been applied to the examination of objects with which the observer is familiar, they do not reveal any very extraordinary features.

The real facts in these two cases are that the eels in paste, provided they are well illuminated, are quite visible to eyes of ordinary keenness of vision, while ordinary objects, if carefully studied under low powers, reveal many features which are not to be seen at a casual glance, or even by the most careful study by the naked eye.

The fact that when our senses are not guided by accurate means for measurement they are very unreliable guides, will, nine times out of ten, be shown by the following experiment: Take a common opera or spy glass, magnifying five to fifteen times, and allow some of your friends, who are unaccustomed to astronomical observations, to look through it at the full moon. In all probability they will declare that the glass does not magnify at all, but that, in fact, while the moon appears a little brighter and clearer, it seems rather smaller than otherwise! After having made this examination thoroughly with one eye, the other having been kept closed, let the person who has been observing now look at the moon through the telescope with one eye, while the other is kept open and also directed to the moon. The obvious difference in size will be perfectly astonishing. The moon seen through the telescope will now appear magnified to its full extent, and the fallacy of the first observation will be apparent.

This simple experiment, in which the observation is made by what is known as double vision, one eye being aided by the instrument, and the other eye observing the object without any such aid, is the first step toward an accurate measurement of the magnifying power of any glass. For, if we could count exactly the number of times that the magnified image is larger than that which is unmagnified, it is evident that we would have an exact impression of the magnifying power. To do this with the moon is not very easy, unless we have instruments which are specially adapted to the work. Let us, therefore, turn our telescope or opera glass to a brick wall, in which the individual courses are distinctly marked. The distance at which we should stand from it should be as great as possible, provided we can see and count the courses of bricks clearly. If we now look at the wall through the telescope with one eye, and directly with the other eye, we will find that each course of bricks, as seen through the telescope, covers several courses as seen without it, and it will be easy to bring the magnified image of one of the courses into such a position in relation to the unmagnified image that we can count exactly how many of the latter are covered by the former. Let us suppose that the number is five, or, in other words, that one brick seen through the opera glass covers exactly five as seen with the naked eye. In this case the magnifying power of the opera glass is obviously five diameters.

By this simple method it is easy to determine the magnifying power of common telescopes and opera glasses with sufficient accuracy for all ordinary purposes, but when we come to apply this system to microscopes, the conditions are so different that special appliances and

methods are necessary.

Granular Kidney.

By careful comparison of the effects of colored injections on sound and on granular kidneys, the speaker found that the latter permitted fluid to pass through the walls of the blood-vessels with much greater ease; and not fluid only, but gelatine, Prussian blue, chloride of sodium, and even solid grains of cinnabar, and this without rupture of the coats of the vessels; this happened not on those parts which showed most connective-tissue growth. but in the vessels still otherwise apparently healthy. Careful injections proved, too, that the capillary network in granular kidneys was very scanty, and that, in many cases the vasa afferentia anastomosed directly with the efferent vessels, being cut off from the glomerulus by the growth of fibrous tissue. On the changes in the walls of the vessels, the speaker remarks that as a rule, in spite of the fibroid growth of the intima, the lumina of the vessels are not smaller than normal; only exceptionally, when the endarteritis has reached a high grade, does this take place. The speaker regards these changes as connected with those endarterial processes—described by Koster, Friedlander, Trompetter, and others—as taking place in almost all new formations of connective tissue, as they bear a distinct relation to the amount of interstitial

growth. These facts are especially opposed to Gull and Sutton's theory that the narrowing of the lumina of the vessels by the new growth causes the obstruction to the circulation. They agree with independent observations that, as a rule, the vessels in granular kidneys are certainly not of less caliber than normal; they prove that the anatomical condition of the organ itself, independent of any vital changes, such as arterial contraction, causes a great increase in the resistance to the circulation through it; they explain the clinical phenomena of polyuria and albuminuria by the increased permeability of the vascular walls. We should very much like to see similar investigations on the state of the vessels in other organs, and especially the skin, in this disease, to determine whether a similar diminution of the capillary area is present. General capillary anæmia is undoubtedly a marked feature of even the early stages of this disease. and it is at least possible that the same cause, acting generally, may produce, although to a less extent, an universal reduction of the capillary network.—Brit. Med. Journal.

Recent Progress in Syphilology.

BY EDWARD WIGGLESWORTH, M. D.

NATURE OF SYPHILIS.—The confusion due to non-compression of the varying results of inoculation has been partially explained by the establishment of the fact that the materials employed were neither pure nor identical, and now, by two hundred experiments, Tarnowski has shown that still more confusion has arisen from the fact that the subjects of such inoculation were necessarily totally unsuitable for purposes of experiment; being, of course, already under the influence of the syphilitic poison, Thus, the general debility would diminish the power of resisting any additional depressing influence, and, consequently, exaggerated conditions would result as effects of inoculation. The quality, also, of the effects of inoculation would vary, and an induration might result, not due to the nature of the material employed, but to the fact that the syphilis already existing in the individual had

exerted its natural tendency in this direction. Moreover, the results of any irritation of the skin of a person suffering from syphilis are most severe if inflicted at the time of special implication of this tissue in the morbid process, that is, during "secondary" eruptions or relapses specially affecting the skin, and they tend, furthermore, to assume the form of the lesion at that time present upon it. Finally, idiosyncrasies do not cease to exist when an individual comes under the influence of the syphilitic virus; and altered general conditions, such as alcoholismus or mercurialismus, must be borne in mind. Tarnowski adds his testimony to the fact that variation in appearances at the point of inoculation depend, as to persons already syphilized at least, upon the intensity of the irritative quality inherent in the material used, and not upon the presence in or absence from such material of the syphil-

itic contagium.

PROPER TREATMENT OF SYPHILIS BY MERCURY.—The method of Ludwig for the detection of mercury in the urine is capable of proving the presence of as little as the onemillionth part, and Guntz has availed himself of this means in order to study the period of duration of this drug in the human system, and the liberating action upon it of sulphur internally and combined with baths. finds (1) that mercury may be detected in the urine after eight weeks or more have elapsed since the discontinuance of any mercurial treatment; (2) that in cases where the urine gives no evidence of the presence of mercury after the administration of the drug, this may be detected after two or three days of the sulphur treatment; (3) that after a few days of such treatment the urine no longer gives any signs of the existence in it of the metal; (4) that while the mercury is thus being eliminated from the system there is frequently a fresh outbreak of the symptoms of syphilis. The therapeutic inferences from these facts are that mercury is the antagonist of syphilis; that it should be administered in small doses and temporarily discontinued upon the slightest manifestations of salivation; and that sulphur is of service where too much has been administered.

Excision of the Initial Scherosis.—Auspitz, during the last four years, has cut out the initial sclerosis of syphilis, at varying periods of its duration, from thirty-three pa-

tients, and arrives, from his observations of these cases, at the following conclusions:

(1.) No general syphilis followed when soft chancres were excised; but from this nothing can be deduced.

(2.) Though indolent buboes were almost invariably

present in the groins, they were absent elsewhere.

(3.) When no subsequent induration occurred at the spot where the original one had been excised, the patient, as a rule, escaped general infection. The assertion that such subsequent induration always occurs is false.

(4.) Phagedæna occurring after excision neither pre-

vented nor foretold general syphilis.

- (5.) Since well-established cases of initial sclerosis were not always attended by general infection, it is clear that such initial sclerosis is no pathological proof of constitutional disease already existing, but is simply to be regarded as the first depot of the infection, at the threshold of the physical system, whence the infection afterward advances. The same reasoning applies to the indolent buboes of the groins, which have long been by Auspitz distinguished from the adenitis of general syphilis. Nearly all the cases of excision where no syphilis followed showed, at the time of the excision, swelling of the glands in the groins.
- (6.) At times a subsequent induration appeared at the spot of excision; yet this must not be regarded as due to any general infection of the system, but as the local result of infectious material which had not been excised.

(7.) In cases where excision does not prevent general infection, it is still possible that it may have exerted some

partially protective influence.

(8.) Excision of the sclerosis, as a protection against syphilis, is to be recommended when the sclerosis has existed but a short time, and when no other symptom of syphilis, except inguinal buboes, can be detected; provided that the sclerosis is where it can be removed easily and without danger. From the glands or sulcus coronarius nothing should be cut. Treat the spot of excision after operation as a simple wound.

EXCISION OF SCLEROSED LYMPHATIC GLANDS.—Dr. W. A. Hardaway, of St. Louis, in a most valuable paper, read before the American Dermatological Association at Niagara, considers that early extirpation of the sclerosed glands contiguous to the initial sclerosis, when they exist

in places favorable to surgical interference, would in some instances serve to avert constitutional disease, and be as legitimate an operation as excision of the chancre itself; He bases this opinion upon the belief, rapidly gaining ground, that syphilitic virus is not absorbed by the blood, but is taken up by the lymphatic vessels, carried to the ganglia nearest the point of initial lesion, and, after there undergoing a period of localization for a variable length of time, is thence dispersed into the general circulation; and that, therefore, syphilis is never ab initio, but only secondarily a blood affection. He gives many cases tending to prove that the secretions of hard chancres and of secondary lesions will produce either hard sores followed by general infection, or soft sores not so followed; these varying conditions being dependent upon (1) the natural tendency to pus formation in persons free from syphilis; (2) the well-known aptitude to pus formation in persons having syphilis; (3) the almost certainty, when the purulent secretions of irritated syphilitic lesions are used, of causing soft sores, although in some cases, when such secretions are employed, certain of the sores thus produced may be soft and others on the same person hard, or first soft and later becoming indurated (mixed chancre).

HEREDITARY TRANSMISSION OF SYPHILIS.—Kassowitz, in answer to the question, "Can the mother, acquiring syphilis during the period of pregnancy, transmit the disease to a fœtus healthy at the time of fecundation?" shows that three conditions are indispensable to its consideration: (1.) The health of the father at the time of fecundation must be proved. (2.) The health of the mother at the time of conception must be established; consequently the time of her inoculation exactly determined. (3.) The syphilis of the child must be proved by unequivocal symptoms. If but a single one of these conditions is wanting, the case is not to be considered for an instant. Where all these have been regarded, Kassowitz finds no case on record of transmission during pregnancy from the mother to the child, and much evidence for the impossibility of such an occurrence. He concludes: (1.) That a child, both of whose parents were non-syphilitic at the time of procreation, does not become syphilitic, even if at any time during pregnancy the mother contracts the disease. The disease may disturb the normal course of pregnancy and interrupt it prematurely, but is never

transmitted to the fœtus. (2.) That a mother bearing a child infected by its father with syphilis is not herself infected by such unborn child. The virus does not cross the septum between the maternal and fœtal vascular systems.

The paper of Kassowitz is answered by Caspari. He remarks that, in order to prove that a mother giving birth to a syphilitic child is herself free from this disease, positive not negative testimony is needed, or, in other words, such a mother must in at least one case have manifested the usual early symptoms of a recently acquired syphilis. Until this has occurred we must presume that such mothers can not be infected, by inoculation or otherwise, for the simple reason that evident or latent syphilis already existed in them. Such inoculation he has made with negative result. A careful examination usually discloses signs of existing syphilis. A case reported by Ljunggren shows that syphilis can remain latent, late "tertiary" symptoms, so called, appearing afterward. infection of nursing mothers by their hereditarily syphilitic children bears testimony also to this.

As to the non-infection of a healthy fœtus by a mother who acquires syphilis at any time after conception, on account of the impermeability of the septum between the maternal and fœtal vascular systems, Caspari cites Friedreich's case of metastatic carcinoma in mother and fœtus; that of Gusserow, who gave iodide of potassium to a pregnant woman, and found it in the amniotic fluid and in the urine of the child; and that of Benecke, who did the same with salicylic acid, while Magendie, Gusserow, Fehling, and he himself have detected in the fœtus of the

rabbit coloring matters injected into the mother.

Bone-Lesions in Hereditary Syphilis.—As diagnostic marks of inherited syphilis, Parrot calls attention to certain osseous conditions, the presence of which would be characteristic, although other clinical signs might be wanting: thus an osseous bulging or tumefaction upon the inner aspect of the tibia occupying its whole extent, or constituting a series of small protuberances separated by depressions; so, also, at the lower end of the humerus, a thickening of the epiphysis as compared with the diaphysis, a point already considered by Taylor (R. W.), of New York. From the seventh to the twelfth month, in addition to absence of hair, tuberosites like orange-seeds may

sometimes be felt upon the sinciput, especially around the anterior fontanelle. Fusiform tubercular nodosites like olives occur also, though rarely, near the head of the femur and other long bones, due to consolidating fractures. Any or all of these conditions may be found with no other

manifestation of the existence of the disease.

SYPHILITIC DISEASE OF THE EYELIDS.—Forty years ago the nature of syphilitic iritis had been recognized by but few writers, while even to-day the syphilitic disease of the eyelids is very seldom recorded. Zeissl attributes this to several causes: (1.) Ulcerative processes in this situation are not often, except in the case of scrofulous individuals, accompanied by lymphadenitis. (2.) Connective-tissue indurations, especially those of syphilitic origin, develop more rapidly in the eyelids than upon any part of the integument, thus confusing the diagnosis, and, finally, (3) both macro and microscopically the initial sclerosis of syphilis and its final product, the gumma, are here with difficulty distinguished. We must, therefore, be always guided by the coincident existence of other lesions; and just as we distinguish an iritis papulosa and an iritis gummoso, so we are also justified in a distinction between blepharitis papulosa and blepharitis gummosa, according to the presence of early or late disease products elsewhere upon the body. B. gummosa is followed, however, by loss of substance here as elsewhere, while b. papulosa leaves no trace, or merely a superficial one. Furthermore, b. gummosa is accompanied by other deep tissue changes, as, for example, tarsitis palpebrarum; for, although Waldeyer denies the existence of cartilage cells in the eyelid, this has been admitted by Hyrtl, Langer, Koelliker, and others. Syphilitic disease of the eyelids must also be distinguished from carcinomatous or lupous affections.

SYPHILIS OF SUPRA-RENAL CAPSULES, PANCREAS, ETC .-Syphilis of the supra-renal capsules has heretofore been observed only in consequence of hereditary syphilis. Chvostek, however, reports a case of acquired syphilis, where, together with disease of the skin, liver, kidneys, lungs, and even pancreas, amyloid degeneration and chronic, interstitial, connective-tissue hypertrophy of the supra-renal capsules were discovered after death, though there had been during life no clinical manifestations of their existence. Syphilitic disease of the pancreas, also

present in this case, belongs likewise to the rarities of medical literature.

SYPHILIS OF THE NOSE.—Schuster and Saenger recommend the use of the scraping-spoon for the removal of syphilitic growths of the nasal cavity, to prevent falling in and to arrest the disease process. Even perforation of the palate by scraping is at times the lesser of two evils. Artificial illumination should be used. Pathologically the conditions existing vary. There may be: (1.) Simple syphilitic infiltration, the mucous membrane not hypertrophied, with or without alteration of the glands, capillaries, or (2.) The same, with hypertrophy of the mucous membrane and constriction of the dilated capillaries by means of cell growth; or, without this, a fact favoring the views of Auspitz and Unna upon the anatomy of the initial sclerosis, namely, that the vessels remain, as the rule, unobliterated. (3.) More severe infiltration of mucous membrane, passing into syphiloma. (4.) Syphilomata of the mucous membrane, or condylomata. The subjacent bones and cartilages may show either necrosis with exfoliation, absorbent inflammation without loss of the mucous membrane, or plastic osteitis with the production of spindle-cells and connective-tissue passing into bony formations.

SYPHILIS OF THE HEART.—As early as 1844 Hammernjk reported a case of insufficiency of the tricuspid valve, due to multiple inflammatory new formations in the papillary muscles. Virchow regards as gummous myocarditis a large number of such cases reported before the structure of the syphiloma was accurately recognized. As sequences of gummata E. Wagner has described (1) atrophy, (2) ulceration or formation of cavities; and Friedreich, certain well-marked white and callous bridles of connective-tissue as late inflammatory products of subendocardial syphilomata. Græffner now reports such a case, in which for years insufficiency of the aorta had existed, to which was added later tricuspid insufficiency, causing the death of the patient, and ascertained by Cohnheim, at a post-mortem examination, to be due to gummous myocarditis with the sequences referred to above. The endocardium was protruded by the gumma into the heart's cavity, producing circumscribed endocarditis in the neighborhood of the ends of the papillary muscles, and resulting in an adhesion of the new formation with the anterior left extremity of the tricuspid valve, the gumma subsequently wasting under the pressure of new-formed sclerotic tissue.

NEURO-SYPHILIS.—As nervous diseases of syphilitic origin are more amenable to treatment than the corresponding idiopathic ones, a correct diagnosis may at times be sufficient to save a life otherwise lost. Althaus calls attention to the fact that though the brain and cranial nerves are by preference affected, the spinal cord is by no means exempt. Syphilitic affections of the nervous system are late forms. Traumatic injuries or depressing emotions act frequently as exciting causes, while a powerfully predisposing cause is an unsystematic or insufficient treatment of the disease in its earlier stages. Cerebral syphilis may appear as (1) successive hyperæmic attacks, with symptoms like those of general paralysis accompanying outbreaks of the disease process locally upon the body, and without treatment the patient finally dies of marasmus. (2.) Syphiloma, accompanied by paroxysmal and intolerable nocturnal headache and by sleeplessnesss, especially in young persons in whom insomnia from other causes is rare. (3.) Disease of the arteries, followed by apoplexy or thrombosis with necrobiosis and syphilitic hemiplegia, after which recovery under the best treatment is generally imperfect.

Dr. Greenfield showed to the Pathological Society of London a case of this sort, a small syphiloma of the anterior cerebral artery, consisting of a small cell growth around minute vessels which were obstructed by a thickening of their coats, due to a concentric growth developing apparently from the endothelial lining of the vessels. This process, progressing to total obstruction of vessels and their consequent obliteration, is a characteristic feature of syphilitic new growths, and is, according to Dr. Payne, the probable cause of the apparent caseation.

What Comes of Overwork.

Before the New York Neurological Society recently, Dr. Wm. A. Hammond read a paper on "Cerebro Hyperæmia." This, he said, was quite a common disease, and was brought on generally by over intellectual exertion. The symptoms are vertigo, noises in the ears, dark spots be-

fore the eyes, a staggering in the walk, numbness in the limbs and twitching or spasms in the face. There is a mental disturbance which is shown by hallucinations, and principally by sleeplessness. The digestion is impaired. These are the symptoms in violent cases. In general, the patient is deprived almost wholly of sleep, or has unpleasant dreams. He finds it impossible to fix his attention on any subject, and is attacked by a pain in the head if he makes a mental effort. An accurate accountant who was attacked by this disease could not add up a column of figures without making mistakes, which in his normal condition he would consider ridiculous. In one case reported a gentleman attempted to commit suicide because he could not solve a simple sum. The patient is forgetful of names and faces, and makes mistakes in using words. There is, too, a great deal of indecision manifested in simple mat-

"I knew a patient," Dr. Hammond said, "to earry several thousands of dollars every day for a month to Wall Street intending to make a certain speculation, but every day he put it off without any reason whatever. There is a morbid apprehension of impending evil, and the patient is afraid that he will himself commit some dreadful act. I have known a man who dreaded to go on a ferry-boat, because he feared that he would throw himself off; of another who would not go near a train, for fear he would throw himself in front of it; of a husband who made his wife keep his razors locked up; of a man who would not take a warm bath, in the fear that he would not turn off the hot water. The subject, however, never yields to these impulses. The emotional system is deranged. The patient becomes suspicious and annoyed on the slightest grounds. A patient once was liable to be attacked by vertigo at any time, so that frequently and in the street he would have to support himself by a lamp-post, or to sit on a stoop until the attack was over. This vertigo is generally increased by mental effort, and disappears more or less when the patient is about to go to sleep. The ocular muscles are easily tired, so that the patient can not read. Sometimes the sense of hearing is very acute, and at other times very dull. The disease is generally accompanied by congestion of the tympanum, and the symptoms are intensified by sulphate of quinine and other medicines, which are sometimes given to patients who

are suffering from this disease. The muscular strength is impaired so that the patient sometimes is unable to lift his arm or his foot.

"The cause of cerebro hyperæmia is mental. A young lady was once attacked by it in consequence of an intense intellectual effort she put forth to solve a mathematical problem. The disease is more apt to attack those in middle life than the young or old. To be cured, the patient should abstain from severe mental work, and should exercise in the open air, indulge in moderate gayety and a plain but nutritious diet."

Pathological Evidence of Malarial Origin of Acute Skin Diseases.

In numerous instances these evidences are patent even to the superficial observer, and may be perceived in the pale, enlarged, flabby and teeth-indented tongue, in the anæmic or muddy complexion, and in distinct malarial periodicity. I say malarial periodicity, because we have scrofulous periodicity as well as periodicity in diseases neither malarial nor scrofulous. Indeed, periodicity is a habit, not alone of disease but of health, not alone in the human system but as well in the aqueous and atmospheric oceans, the heavenly bodies, and even it is asserted of the convulsions of nature.

In a large proportion of cases, however, it is only by patient, careful and minute inquiry and investigation that we are able to detect the malarial element. Prolonged malarial disease may exist without any apparent anæmia or pigmentary discoloration, though the opposite is the rule.

The cutaneous lesion may be more pronounced at a certain period of the day, or on certain days, in its color or in the sensation of heat, pruritus or pain; or its secretion may be periodically augmented. Again, eruption may evince no periodicity, but some organ or function of the body will do so, and the treatment which cures the one removes the other. Furthermore, though no form of periodicity be discernible, yet the antiperiodics will cure these diseases with more certainty than any other medicines, and also more promptly.

These facts I verify daily in my private and dispensary

practice in Louisville. In the inmates of hospitals and in private individuals, in New York and Philadelphia, and in Boston and its vicinity, as well as in the southern cities, I have been enabled to distinctly recognize the marks of malarial poison; of course in a milder form in the North than South. It can not be denied that in all the Northern States the summer heat is sufficient every season to develop malaria, though it be less universal in extent and of less intense form than in the Southern States. Your lakes, fish-ponds, mill-ponds, canals, reservoirs and rivers are all sources of malarial poison. In all the cities above enumerated you have the commingling of salt and fresh water in the mouths of your rivers, and than this there is no more certain nor universally admitted source of malaria. In addition to all this, in all these cities and in all other cities which I am acquainted, there are wooden pavements, and these rotting under the combined influence of the summer's sun and the water sprinkled daily on them to lay the dust, may be foci of the potent and insidious miasm .- Dr. L. P. Yandell.

Abortion, its Symptoms and Treatment.

R. A. F. Penrose M. D. (Medical Record, December 29, 1877).—"The great accident of pregnancy is abortion." The expulsion of the product of conception from the uterus before the seventh month constitutes abortion. "The escape of the ovum before the twentieth day constitutes an effluxion." According to recent statistics thirty-seven out of every one hundred women abort at least once before reaching the age of thirty years, and it may safely be said that ninety per cent. of married women abort at some period of their lives. The fact that one hundred and six boys are born at full term, against one hundred girls, would seem to indicate that abortion is easier in the case of female children than in that of male children. Abortion may be of three kinds—spontaneous, accidental and designed.

The causes of spontaneous abortion may be divided into

three classes:

I. Those resulting from the constitutional peculiarities of father and mother.

II. Those resulting from the condition of the uterus and

its appendages.

III. Those resulting from a diseased condition of the ovum. Among the constitutional causes may be mentioned plethory, and its opposite, anæmia, the nervous temperament, and constitutional syphilis, and debauched old age also. A man who has once had constitutional syphilis should never marry.

Under the second class these conditions which interfere with the development of the ovum are mentioned as most important, viz: displacements, inflammatory affections of the uterus and its linings, tumors, diseases of the rectum,

bladder and ovaries.

Periodic abortions are due to menstrual congestion of the mucous membrane, a diseased state of the uterus, or some abnormal organic condition. Retroversion of the uterus and chronic endometritis cause the abortion of the impregnated ovum early, if not always, at least very fre-

quently, where those troubles exist.

The most common causes of abortion are those that are found in the ovum itself. "Almost all the diseases which occur after birth may be present also in uterine life"—inflammations, dropsies, diseases of liver and kidneys, tuberculosis, stranglings, twistings and knots of the cord. Small pox may be developed in the fœtus, while the mother shows no signs of the disease. The great majority of fœtal intra-uterine diseases are the results of constitutional syphilis in the parents. Also, the placenta may have hydatid disease of the villi, there may be alteration of the amnion, and even fatty degeneration of the placenta itself. It is the opinion of Dr. Barnes that fatty degeneration of the placenta is caused by syphilitic infection, resulting in an imperfect formative force in the ovum.

Accidental abortion is very likely to occur at the menstrual period, and may be caused by a violent fall, sudden fright, great grief, etc. Also, it may be produced by a

distant irritation, as an irritated nipple.

There are many other causes that are sure to produce accidental abortion, among which may be mentioned the careless use of the uterine sound.

The two main symptoms of abortion are pain and

hemorrhage.

The positive diagnosis of abortion can only be made by the discovery of the ovum in the discharges, or elsewhere. The discharges should all she saved for the inspection of

the physician.

The prognosis is generally more favorable in spontaneous than in accidental abortion, for in accidental abortion the hemorrhage may be so rapid and profuse as to suddenly kill the patient. In a majority of criminal abortions hemorrhage kills the victim. Abortion produced by small-pox, scarlatina, dysentery, or pneumonia, is exceedingly fatal to the mother. Abortion during the course of the disease, small-pox, is much more fatal than during convalescence from the same disease.

The treatment of abortion may be said to be both preventive and curative. The preventive treatment includes all the means used to prevent the repetition of abortion. Plethora, anæmia, or nervous irritability, should be modified or removed. Syphilis should receive proper treatment. Local disorders, such as chronic metritis, hypertrophy, prolapse, retroflexion, or erosion of the uterus should be treated to remove the disorders. If a syphilitic mother become pregnant she should be subjected to mercurial treatment. If the ovum is already diseased, it will be impossible to avert an abortion, and it will be better

to allow nature its own course in such a case.

In case a healthy ovum threatens to abort, if there is little or no dilatation of the os uteri, it is sometimes possible to prevent the abortion if hemorrhage has not been too great. If dilatation is considerable, and the ovum is bulging, you can not stop the termination of the attempted abortion. It will be better to assist it and control the hemorrhage. To control hemorrhage, give ergot in full doses, and use the tampon rather than depend upon icecold cloths, gallic acid, acetate of lead, etc. The tampon may be a temporary affair of a torn napkin, if nothing better is at hand; cotton batting in balls answers this indication well. The curative treatment of abortion is important. If an abortion has occurred, secure by all means an entirely complete evacuation of the contents of the uterus. Don't leave the placenta to come away by the efforts of nature alone. When the after-birth has all been removed you may rest easy, and not before.

If there is a placenta left behind, a troublesome hemorrhage is almost sure to follow sooner or later. Press the uterus down into the vagina, and introduce the finger into it, and hook down the placenta. If the finger is not

able to reach high enough, a duck-bill forceps may be used with caution. But the placenta must be brought

away to insure safety to the patient.

If there is hope of preventing abortion, put the patient to bed, use opium per rectum. Give the bromides freely. If the patient is plethoric, take blood from the groins by leeches, or from the arm with the lancet. Dry cups on the sacrum, or mustard plasters, may also be used.

After the abortion has occurred, keep the patient on light diet, and in bed for two weeks or more; regulate the bowels with salines. Give ergot to promote involution of the uterus, and when the patient is up, put her upon

tonic treatment.

Visits to Philadelphia Clinics.

A Boy fifteen years of age; has had chills and fever last May he turned over in bed and a burning pain shot down the arm; since then he has had a great deal of pain in the arm; atrophy of flexor and extensor muscles; can not open fingers; the pain is along the course of ulnar nerve; rotation is all right; no pain above the elbow; skin of forearm is changed; ridges on the nails, which grow irregularly. It is a rare case; probably the boy has neuritis chiefly of the ulnar nerve; this has caused trophic changes in the muscle.

Treatment.—Blister along ulnar nerve, to be followed

by free poulticing.

R Cor. sub	gr. j;
Iod. potas	
Simp. syrup	
Water	

Ice applied in bladders, used either iustead of the blisters or following the healing of the blister. For pain give

an occasional hypodermic injection of morphia.

A carpenter, aged thirty-five; pain in hip for five months over the seat of sciatic nerve; pain shoots down the left leg; does not move the left as well as right leg; pain not constant; when exerts himself there is a numbness of leg; he thinks it came from an injury. It is sciatic neuritis. All sciaticas are not due to neuritis, but may be simply neuralgic. When there is inflammation blister ought to be used. Large doses of iodide potass. 20 gr. v.

d. When one blister gives out use another. As a last

resort, the red-hot iron.

Joseph C., aged thirty-six; paralysis of left leg. This came on suddenly after being exposed to the wet. He can now stand on his foot, but has not the right use of his legs. About a year ago he was unconscious for five or ten minutes, and was not strong enough to go to work for three or four months. Sensation is much impaired in the left leg, and has a feeling of coldness. Electromuscular sensibility is much impaired; can kick but feebly with left leg; joints are not affected; no pain or tenderness along sciatic nerve; no local trouble the cause of the paralysis; low down the spine there is tenderness; no heart trouble, and no albuminuria; has a feeling of tension or pain around the abdomen; a constant desire to pass water. The difficulty is in the spinal cord. The fact that it is limited to lower limb points to spinal cord. It is a case of spinal congestion, approaching spinal meningitis.

Prognosis.—He will recover of the present trouble. He is subject to nervous trouble, but some time he may

have cerebral or spinal apoplexy.

Treatment.—An acute case; local abstraction of blood; 123 to be taken by cups at lower part of spine; cold applications following; reducing spinal congestion, ergot and belladonna 20 m. fl. ex. ergot, to begin with, v. d., increased to 3j; rest as much as possible; unload portal circulation, giving occasionally a saline mixture, Rochelle salts 3 ss.

on alternate mornings.

Young man, aged twenty-five; eruption; reduced by croton oil; was affected with phthisis, and was ordered oleum tiglii; it produced an eruption upon chest, penis, and scrotum; wherever he touched the parts the oil took effect, and it also purged him vehemently; this is very rare; bowels moved four or five times a night, and same number through the day. If the eruption annoys use benzo-oxide of zinc ointment. He is tubercular, and has had a cough for eight months; dullness at right apex; prolonged expiration; slight dullness of left apex; has not spit blood; does not expectorate much; had sweats, but they are now much modified by sulphuric acid gtt. 10 and com. tinct. cincho. 3j. t. d., cod-liver oil \$ss. v. d.

Charles J. D., aged 34; passed worms a year ago, one or two worms a day, and they have increased since that time; passed only pieces of worms; headache sometimes; not sick at the stomach; constipated; appetite excessive; constant craving; thirst moderate; pain in the neighborhood of the umbilicus; cramp pain for a couple of hours every day; uneasy feeling in the stomach. A case of tape-worm. This man has more than the usual symptoms of tape-worm; symptoms may be absent in such cases; tongue is not coated; no attacks of giddiness; good eyesight; special senses are not affected; no cough; his pulse is 96, and no heat of skin; tænia solium; comes away in segments. He is a butcher, and sometimes eats raw meat; this gives the probable origin of the tape-worm.

Treatment.—Head of worm must be expelled; there may be three or four heads, one large tape-worm and other smaller ones. Begin with a dose of calomel, and follow with turpentine; give 5 gr. calomel at night, 10 gtt. turpentine four times next day on sugar. After two days taking turpentine he may take pomegranate or 20 to 40 gtt. of eth. ext. male fern in milk. Kooso is another remedy, and it is the most certain—\$\frac{3}{2}\$ jin one pint and a half of hot water, and simmer down to a pint; half to be taken one day and half another. Give almost nothing to eat.

Kameela another remedy.

Peter M., a little boy who was before the clinic with marked enlargement of spleen in September; the enlarged spleen the result of malaria. There has been marked decrease of the size of the spleen. Dullness is an inch and a half below the ribs and three inches from the umbilicus. It is still enlarged, but greatly decreased. The quinia in 6 gr. doses was given for four days, and then was reduced to 2 gr. Dialysed iron was given gtt. 5. Ergot gtt. 8. t. d. did the business. It is best to use it hypodermically, but can not use it so on children, because it scares them; so we will continue the ergot and stop the other medicines.

A brother of the above boy, aged 12; he has outbreaks of fever, and has also an enlarged spleen. We determine the line of enlargement by percussion and by feeling the line of spleen. Dullness begins at upper margin of fifth rib, and extends to umbillicus, and almost down to the crest of ilium, within an inch of it; no dropsy; bowels are moved daily; urine has not been examined; will examine the blood.

Treatment.—Give quinine gr. 4 early in morning, dia-

lysed iron gtt. 10 t. d., fl. ex. ergot m. 15, to be increased in a few days to m. 20; might try it hypodermically in this case.

Case of Gunshot-Wound of Abdomen.

BY T. J. TURPIN, M. D.

On the 8th of November, 1877, I was sent for to see a negro boy, aged four years, who had been accidentally shot. On my arrival at the house, about an hour after the accident, I found the child lying upon the bed, vomiting, pulse 140 and very weak. He was perfectly conscious, and did not seem to have much pain. The wound. produced by a "Derringer" pistol-ball, was upon the left side of the body, about midway between the twelfth rib and the crest of the ilium. I introduced a pocket-probe, and found that the ball had entered the abdominal cavity, ranging forward and downward. Not more than half an ounce of blood had been discharged, and there was no discharge of fecal matter.

I gave a little whisky, and the patient reacted in a short time. I gave two grains of Dover's powder, and left some powders of the same to be given every four hours, or oftener if there was much pain. I left the house after telling the mother that there was almost no hope of recovery.

During the evening there was an action on the bowels containing about an ounce of discolored blood. The urine was also evacuated, and was normal.

The next day I heard that the child was dead; but four days afterward, on the 13th, the father called at my office for "some more powders," and explained that the report of the child's death was incorrect, and grew out of the fact that another child had died in the neighborhood.

I went down to see the child at once, and was met at the door by the patient in person, who said, in reply to my question, that he "was very well, thank you." The wound had cicatrized, and there had been a natural action from the bowels every day without blood or pain. The mother stated that she had given the Dover's powders for two days and nights (as long as they lasted), and that the child had not cried or complained of pain since the accident.

I found, upon examination, that the abdomen was still rather fuller than usual, and that there was some pain on pressure. The pulse was about 90, and the mother stated that he had not had any fever. I have seen the child twice since, and he is entirely well.

GAINESVILLE, FLA.

Flesh of Diseased Cattle as Food.

An act of Parliament in Great Britain requires that, to prevent the spread of pleuro-pneumonia among cattle, they shall be slaughtered on the first appearance of disease. The meat of cattle so killed having been sold and used for food, an attempt was made to put a stop to the practice. This brought out an address to the public by several medical gentlemen who had investigated the subject, and who declare that no bad effects have ever. followed the consumption of such flesh either by man or animals. We copy the subjoined passage from the address as published in the *Press and Circular*, presuming, however, that the editor of that journal dissents from its conclusions:

"On carnivora in the Zoological Gardens the meat has produced no perceptible effects, and there is no case on record wherein the flesh of cattle slaughtered while suffering from pleuro-pneumonia, in any stage, has ever been proved to give rise to disease in man. Revnal states that the flesh of animals who have suffered from this disease has been in daily use in Paris for the past twenty years without any appreciable results. Loiset states that, during nineteen years, the flesh of 18,000 diseased animals has been used as food in Lille, and that during that time there was no appreciable alteration in the death rate, nor any unusual accessions of disease. Mr. Gamgee states that in 1862 more than one-fifth of the meat consumed in Edinburgh was that of diseased cattle, and yet that year was not one of unusual mortality. Dr. Greenhow, in the report sent in by him to the President of the Board of Health, in 1857, states: 'I have been unable to ascertain that eating the flesh of animals that have suffered from pulmonary murrain produces any injurious consequences on human health.' Dr. Druitt, of London, states that he 'never saw any case of illness

arise from eating the meat of diseased animals.' Levy, in his 'Traite d'Hygiene,' quotes instances of the consumption of similar diseased cattle on a large scale, with no injurious effect; and Coze, in the Memoirs of the Agricultural Society of Paris, gives similar instances of the wholesale consumption of diseased flesh in Strasburg. Huzard and Frank might be quoted also in the same connection.

"Mr. Fleming, in his work on 'Veterinary Sanitary Science,' before quoted, says, in speaking of pleuro-pneumonia: 'Since the malady has been recognized it may safely be asserted that the flesh of millions of diseased animals has been consumed as food in every part of the world, and yet there is not, to my knowledge, a single instance of any accident attending or following its use.'"

MICROSCOPY.

Enumerating the Corpuscles of the Blood.

DR. JOSEPH G. RICHARDSON, of Philadelphia, has kindly sent us a paper which he recently read before the New York State Medical Society, on an "Improved Method for Detecting Leukæmia during its Early Stages," from which we make an extract describing his mode of enumerating the blood-corpuscles in disease generally. We are sure it will interest all, whether microscopists or not:

"In the course of my observations upon the blood of different nations, as represented at the Centennial Exhibition in Philadelphia, year before last (Vide Am. Jour. of Med. Sciences, Jan., 1877), I had occasion to measure a great number of the red discs as spread out by Prof. C. Johnson's method, in thin layers of blood drawn from the different Commissioners, and dried upon glass slides, and I was much struck with the ease and certainty with which the white corpuscles could be detected, discriminated from the red, and enumerated, also, in healthy blood. As a consequence I was led to experiment further upon cases of true and of suspected leukæmia, with a view of utilizing for the benefit of the profession this simple fact.

"After long consideration and numerous trials, the following plan was elaborated. In the first place, to obtain

and prepare your specimen, you require a clean sewingneedle (No. 6, sharp, answers best, but any kind will do), and two ordinary microscope slides (preferably of plateglass with ground edges), one of which should have a blank label pasted near its extremity. Having punctured the middle or ring finger of your patient by a quick stab with the needle, and squeezed out a drop of blood about the size of a large pin's head, such as I show you here, touch the apex of this drop to the surface of your labeled slide near its end, and then immediately spread it out by means of the edge of your other glass slip applied to the portion of the blood-drop which adheres to the first slide, and whilst holding slide No. 2 at an angle of 45°, drawing it rapidly along the flat surface of No. 1 in such a way as to leave a faint reddish film equably distributed over the latter. In half a minute or less your preparation dries, and, if protected from dust and moisture, may be examined any time between this and our next Centennial in 1976.

"After writing the name of the patient, with date at which it was obtained, upon the label (and this ought always be done at once), the specimen should as soon as convenient be simply inspected under a power of two hundred diameters. This preliminary examination may be made by any one having even a rudimentary acquaintance with the use of the microscope, and by it a mere tyro can determine, on comparing it with a similarly prepared sample of blood from a healthy person, the presence or absence of any marked change in the ratio of the red and white corpuscles. In order, however, to establish the amount of alteration, should any exist, the sample of blood thus prepared ought to be submitted to some skilled microscopist for further investigation.

"For the purpose of facilitating the enumeration of the colorless globules, and ascertaining their proportion to the red discs, without undertaking the almost interminable task of counting all the latter contained in a given area of the film of blood, I would suggest the following

scheme:

"Provide, in the first place, a stage micrometer ruled in $\frac{1}{2}$ mm., upon glass about half the thickness of an ordinary slide. Lay your blood specimen upon the stage of the microscope; find an area of $\frac{1}{2}$ mm. in width, by 5 mm. in length, where the corpuscles are spread so thickly as to almost touch, and yet are in no case superimposed upon

each other. Such an area as this can generally be met with quite readily, and when discovered lay upon it your $\frac{1}{2}$ mm. micrometer face downward, so that its lines can be seen (somewhat indistinctly perhaps) at the same time the blood-globules are in focus. Secondly, procure an eyepiece micrometer with very coarse divisions, such as this I here exhibit, the lines of which are $\frac{1}{20}$ of an inch ($\frac{8}{10}$ of a millimeter) apart, and place it in your 'A' eye-piece, so that its lines divide the field of view into from eight to twelve transverse bands, each about the width of five red blood-corpuscles, as seen with the aid of a $\frac{1}{4}$ or $\frac{1}{6}$ objective.

"These little pieces of apparatus are merely aids to the accurate counting of the red discs, which operation should be performed very precisely with the eye-piece and objective you propose to use in subsequent investigations, and their number carefully recorded as a unit of enumeration for the white corpuscles. This counting I have found to be most readily accomplished by adjusting the camera lucida, drawing on white paper the outlines of the field of view with both the transverse lines of the eye-piece micrometer, and the vertical lines of the superimposed stage micrometer; and then counting the individual globules in a band at a time, dotting each corpuscle as it is enumerated upon your paper with a lead pencil, so that none

may be missed, and none may be counted twice.

"In order to attain perfect accuracy, it will of course be necessary to count the red corpuscles as well as the white ones in each successive field; but as even such a task would only yield approximate results (on account of the necessary inequality with which both kinds of globules are spread out upon the glass), it is not worth while to undertake it. For practical purposes we may consider the number of red discs in each field of a given lens and eye-piece, where these discs nearly touch, but are not piled upon each other, as identical, and the sum of the white corpuscles observed in ten successive fields answering this description, divided into ten times the number of red discs counted in one such field, shows us the ratio of the white to the red corpuscles. For example, with the 1 inch objective and 'A' eye-piece of my Powell & Leland's stand, I find the field of such a single layer of blood as that above described shows me 3,000 red discs, and that ten fields display about 100 white globules. Dividing now 100 (the number of leucocytes) into 30,000 (the number of red discs in ten fields—each $\frac{1}{2}$ a millimeter wide), I obtain the fraction $\frac{100}{30000}$, or, reducing this to its lowest terms, $\frac{1}{300}$, as the proportion which the white bears to the

red corpuscles.

"In counting the white globules it has seemed to me advisable to first look carefully at each corpuscle within the upper transverse band, as marked off by the eye-piece micrometer above mentioned, then to scrutinize all those in the second band, and so on until all are inspected. In doubtful instances, the leucocytes may generally be distinguished from the red discs by turning the fine adjustment screw so as to raise the lens a very little, when the white corpuscles usually display a peculiar fatty luster which suffices for their discrimination. Care must be taken to avoid mistaking unusually large aggregations of the (fatty?) molecules of the blood for leucocytes.

"Sometimes, in examples of profound anæmia, it is difficult, or even impossible, to obtain satisfactory fields of the kind I have described. In such instances, our only resource is to select an area where there are ten contiguous fields over which both kinds of corpuscles seem equally distributed, and then, counting the red discs in one field and the white globules in all, proceed as before

directed.

"This method is most readily applied with the aid of a mechanical stage, but may be employed if sufficient care is exercised by an individual having command of any one of the cheaper forms of the microscope, provided it affords sufficient amplifying power (say 200 diameters), with good definition.

"Having thus, by my improved method, determined the true ratio of the white globules to the red discs, it becomes an easy matter to calculate the actual number of the leucocytes in each cubic millimeter of blood, after we have determined, by the aid of Hematimetre, of Hayem & Nachet, or of Malassez, the number of the red corpuscles in that quantity of the circulating fluid.

"This little piece of apparatus, which I here exhibit, is merely a very ingenious contrivance for mingling an accurately measured fraction of a drop of blood with 100 times its bulk in serum, and then counting the red and white corpuscles in the 500 of a cubic millimeter of this mixed fluid, measured under the microscope with scrupu-

lous exactness. For example, ½ of a cubic millimeter of my own blood, diluted with ½ a cubic centimeter of artificial serum, contains in each ½ of a cubic millimeter of the mixed liquid about 112 red corpuscles; multiplying this number by 500, we obtain the number of red discs in one cubic millimeter of the diluted blood as 56,000. But as the fresh blood was diluted with 100 times its bulk of serum, we must again multiply this sum by 100 to find the number of red corpuscles per cubic millimeter of pure blood, and thus we obtain the product 5,600,000 as the globular richness of this particular specimen."

San Francisco Microscopical Society.

PRESIDENT HYDE gave a cogent summary of the recent remarkable discoveries of Professors Boell, of Rome, and Kuehne, of Heidelberg, in the anatomy and physiology of the eye. He said that the popular notion that the murderer's image is found photographed as it were on the retina of his victim's eye may have some foundation in fact, viewed in the light of these recent discoveries, especially those of Dr. Kuehne. Histologists have always considered the rods and cones of the retina, which are taken to be the terminal organs of the optic nerve, to be in a natural condition when under examination. Prof. Boell found, however, that when the animal, say a frog. is killed rapidly and the retina viewed as quickly as possible, it has peculiarities never before observed and throwing new light on the physiology of vision. Since the experiments of Dr. Kuehne are more elaborate and extensive than those of Prof. Boell, a sketch of them will be most instructive. Prof. Boell found that the newly removed retina had a rosy purple tint, which was difficult to examine, because exposure to light changed it in ten seconds to a satiny luster, and then after fifteen minutes of transparency to a turbid opacity. Dr. Kuehne discovered that if kept in the dark, or in sodium (yellow) light, the delicate "vision purple" of the removed retina could be retained as long as wished, thus making a series of very original and incisive experiments possible. It is proved that the retina contains a substance which, under the influence of light, undergoes a chemical change varying in intensity with the intensity and character of the

luminous rays. In the living retina there is some process which restores to this substance its responsiveness to light as fast as it loses it by the action of light—a continual recharging with powder, as it were, of the retinal batteries which the impact of light waves is continually firing whilst vision continues. But after death, or removal of the retina, the gunner—the faithful heart with its supply of nutrient blood-having ceased his work, the last charge is fired and the batteries stand empty. So, the light waves remove the color from the isolated retina in a few moments, unless they be shut out by darkness, then the retina can be kept in its natural condition, purple colored, the batteries ready charged to signal to the brain by their discharge the impact of the first light wave. Having thus the power of keeping retinæ just as they leave the eye, by immersing them in darkness, or yellow light, very much as the photographer takes his negative from the camera and preserves and finally fixes the image, working at it always by yellow gaslight, Kuehne also preserved the images that were in the natural photographic plate, the retina, of the natural camera, the eye, and actually fixed these images—by soaking them in a solution of alum. Thus he would fix the head and one of the eveballs of a living rabbit opposite a bright skylight, cover it with a black cloth for five minutes, then remove the cloth, exposing the eye a few minutes, immediately remove the eye, soak in alum, and, upon examining the retina, find a beautifully accurate image of the skylight, showing its separate parts, the boards, etc. Even the eye in a severed head gave these results. The images were generally of a rosy hue.

Now, while this proves that images of objects seen before death may be found on the retina after death, yet, since to make this possible, the eye and the object must be perfectly still for some minutes, and the light must be strong. It probably never has happened, and never will happen, that the image of the murderer is found in the eye of his victim, murder being a deed of darkness, and a deed tending to anything but immovableness in those

enacting it.

Dr. Wythe promised a future paper about his two amplifiers, which were described in full in this paper for March 18, 1876, and which many critics did not seem to understand. For the present he simply drew attention to

an article on "The Amplifier," in the American Journal of Microscopy, February, 1878, by Dr. Gustavus Devron, of New Orleans. This critic, like the others, seemed to wholly overlook the fact that Dr. Wythe had invented two very efficient amplifiers, and in claiming that the second one is not new, forgets the first. Tolles' amplifier, an achromatic meniscus, is fine, but does not equal Dr. Wythe's double conclave amplifier, which has enabled him, with a fourth and ordinarily oblique illumination, to resolve Surirella gemma into beads. Dr. Wythe repeated his opinion that improvements in objectives had reached their limits, and we must look in the future to changes in the eye-piece for greater power.

After accepting the resignation of Mr. J. A. Langetroth as treasurer, and continuing for some time the lively discussion inaugurated by President Hyde's remarks, the

meeting was adjourned.

Gundlach's Objectives.

We have been receiving recently letters inquiring in regard to some of the objectives of Mr. Gundlach. We have given in the past pretty full descriptions of the work of Mr. G. since he has been in this country, but have no

objections to referring to some of it again.

Undoubtedly the credit belongs to Mr. Gundlach of being the first maker of object glasses for the microscope in this country of reducing the price so as to bring good work within the reach of those of limited means. Previously those of this class had to content themselves with the miserable, cheap, French, commercial lenses, or abandon microscopic investigations. But how, thanks to Mr. Gundlach, the enthusiastic student of physiology, pathology, botany, entomology, or any of the other departments of natural science, although poor in purse, may be supplied with object glasses of excellent quality—of a quality that makes it a pleasure to work with them—at a very reasonable price.

An objective of Mr. Gundlach's that we use very much in ordinary work is a three-tenths. Its power is such that makes it suitable for more work than any other one lens. Of greater amplification than a half, but less than a quarter, it is certainly well adapted as regards magnifying power for the examination of a multitude of objects. Its angle of aperture is seventy-five degrees, and it resolves beautifully p. angulatum and much more difficult tests. We are confident that any one having it would regard it as a most serviceable glass. It is without correction for glass cover, but it is very accurately corrected for coverings of medium thickness. Its price is only eleven dollars.

The four-tenths of Mr. Gundlach's, one hundred degrees angle of aperture, price twenty dollars, is another low-power lens in which we do not believe any one would be disappointed. Its resolving and defining powers are excellent. It is capable of all the work that the best objectives of like power by the most eminent English makers are. We would have no hesitancy to pit it against any of them.

We have described Mr. G.'s one-fifth, one hundred degrees angle of aperture, price fifteen dollars, so frequently that it seems unnecessary for us to go into any

further description of it.

The files of the Medical News, for 1877, give very full accounts of Mr. Gundlach's objectives and microscope stands. If those who desire fuller information will consult them we think they will be abundantly satisfied.— Eds. Med. News.

GLEANINGS.

THREE CASES OF THORAIC ANEURISM TREATED BY ELEC-TROLYSIS .- One of these cases occurred in the service of M. Dujardin-Beaumetz, at the Hopital Saint Antoine, in Paris. The aneurism, which had been growing for two years, formed a prominence on the right side of the sternum, extending from the third to the fifth rib. The pulsations were expansive, forcible, and easily perceived by the naked eye. In the operation a battery of Gaiffe, containing twenty-six elements, was used. Three needles were intr duced into the tumor, one in the third and two in the fourth intercostal space, and the current was passed through each of them in succession for ten minutes. The negative electrode was applied to the right side of the thorax. During the passage of the current the patient experienced little pain. Four hours after the operation the pulsations had diminished notably in force, and the

patient felt greatly relieved. On the next day the pulsations were scarcely appreciable in the fourth intercostal space, where they had previously been very marked. On July 10, when the article from which the above is taken was written, the improvement still persisted. It was then the intention of M. Dujardin-Beaumetz to repeat the operation at intervals of about a month, in the hope of obtaining complete coagulation of the tumor. As, however, the patient is affected with hypertrophy and dilatation of the heart and aortic insufficiency, it is not likely that the improvement will be sufficient to enable him to resume

his former occupation.

The other two cases are reported by Dr. Henry Simpson, of the Manchester Royal Infirmary. In one of these cases the tumor first appeared in the second left interspace. close to the sternum, where pulsation was evident both to touch and sight. After several months, solidification of the upper portion of the aneurism took place, and it gradually changed its position, sinking lower down behind the sternum, and leaving its former site resonant on percussion. In January, 1876, ten months after the first symptoms of the affection were noticed, there was a prominent, pulsating eminence occupying the lower portion of the chest, from the level of the nipple to the ensiform cartilage, and at one point a distinct sense of fluctuation was felt over a space as large as a shilling. Electro-puncture was used on three occasions, and on one occasion the current from thirty-five cells was passed through the tumor for three hours, by means of wet sponges. Foveaux's battery was the one employed. In the two first operations of electro-puncture eight cells were used, and in the third thirty-five cells. The tumor felt somewhat firmer after the first operations, but there was no marked change in Hemorrhage took place several times from the punctures, and the patient died seven days after the last operation, from syncope, after losing a few ounces of blood. At the autopsy the aneurism was found to be altogether within the pericardium.

In the other case the tumor occupied the middle and left side of the neck, extending upward to the level of the upper border of the thyroid cartilage, while below it was lost behind the sternum and the left clavicle. It measured $4\frac{3}{4}$ inches vertically, and $6\frac{1}{4}$ inches transversely. On February 26, 1876, three needles were passed into the

tumor, and the current was passed through it for nearly two hours. Foveaux's battery was used. Eight cells were used at first, and the number was gradually increased to twenty. After the operation the tumor diminished rapidly in size; on March 22 it measured only 2\frac{1}{2} by 3 inches, and on October 12 $1\frac{1}{4}$ by $1\frac{3}{4}$ inches. The patient's general health was good, and he felt perfectly comfortable. On October 18 the operation was repeated, Stohrer's battery, with ten cells, being used. The patient at first did well, but, a fortnight after the operation, inflammation set in and an abscess formed, which was aspirated, and subsequently discharged freely. On December 27 a sudden gush of blood, estimated at two pints, shot from the aneurism, and the patient fell back dead. At the autopsy the aneurism was found to involve the innominate and the transverse arch of the aorta. It was lined anteriorly and above by a dense layer of fibrin an inch in thickness. The true wall of the aneurism was destroyed opposite the first piece of the sternum, and the cavity found at that point contained pus, and communicated with the interior by a tortuous opening. In this case it is fair to conclude that the electrolysis added six or seven months to the patient's life, while it certainly gave him freedom from pain and discomfort. - Gazette des Hopitaux.

Excision of the Superior Maxillary Bone.—M. Letievant gives details of a case of very large fibrous nasal polypus, for which he excised the upper jaw. The patient was a young adult, and the tumor protruded into the pharynx, filled up the antrum, and had caused absorption of the hard palate. The operation was one of great difficulty, the bleeding being very profuse, and the danger of asphyxia great. At one time M. Letievant says he was doubtful if he should be able to complete his operation, "but thinking of a new instrument, the pinces a resection of Farabœuf, I applied it to the tumor, and making by its aid a violent effort, tore out, at length, en bloc, the whole morbid mass together with the osseous plates to which it was attached." The patient made a good recovery, healing taking place with the rapidity usually noticed in this operation. While the case thus detailed is in itself instructive, the chief interest of the paper?lies in the modifications which the surgeon put in practice in the resection

of the bone, and which he offers for the acceptance of surgeons. His aim has been-1st, the conservation of the infra-orbital nerve; and 2d, the preservation of three spicules of bones intended to form a sort of tripod for the support of the cheek. He accomplishes the first of these ends by cutting out a triangular portion of the bone, just over the infra-orbital canal, by means of a mallet and chisel, the rest of the canal he lays open with bone forceps, and then lifts the nerve out of its resting-place, and keeps it lying on the deep surface of the flap. The three processes of bone he obtains in the following manner:-1st. On the inner lip of the notch made in the separation of the infra-orbital nerve he cuts, by means of forceps, an osseous slip, consisting of the orbital border of the bone and its connection with the nasal process, which latter he also separates from the body of the jaw. 2d. On the outer lip of the same notch he cuts a second osseous band, which consists of the malar portion of the orbital border and its continuation into the body of the malar bone; then he cuts the malar away from the maxilla. 3d. The gum and mucous membrane is scraped from the vault of the palate and alveolar process on the diseased side, and with the cutting forceps or chisel a section is made commencing behind the lateral incisor tooth, running into the anterior palatine canal (taking, indeed, the line of separation of the pre-maxilla and maxilla proper); from thence it is carried directly backward in the middle line, so as to sunder the two palate process as far as the affected border of the soft palate. M. Letievant quotes Longet in proof of the loss of muscular power which results from section of the sensory nerves of the face, and draws the following conclusion: "It is then evident that it is not enough to save the facial nerve in order to preserve to the facial muscles their muscular irritability after the operation of resection of the superior maxilla, but that it is necessary to preserve also the infra orbital nerve. The preservation of this, moreover, while it retains the motor-power, retains also the sensibility, which is a point not to be disregarded."-Lyon Medicale.

THE ADMISSION OF WOMEN TO MEDICAL DEGREES.—Dr. Tilbury Fox, in a recent number of the Lancet, says, I hope you will allow me to direct attention to the kind of examination—as shown by recent papers—which women

will have to undergo, in company with young men, in order to gain admission to the medical degrees of the University of London. I ask this in the hope that many of the Arts, Laws and Science graduates who read the Lancet may be enlightened upon this particular point.

On turning to the examination papers for the last half-dozen years, I find, among others, the following questions

set by the examiners:

First M. B., July 30th, 1877.—"Describe the membraneous portion of the male uretha, and the structure in *immediate* relation therewith. Mention the chief points of difference in the female subject."

M. S., 1872.—"Describe fully the character of the so-

called soft and hard chancre, etc."

Second M. B., 1873.—"Give an account of the modes in which syphilis becomes propagated; the details by which the poison is diffused throughout the system, etc."

First M.B., 1873.—"Describe the connection of the lower four inches of the rectum in the male, the naked-eye character of the coats of gut for the same distance, etc."

First M. B., 1875.—"Give an account of the genito-uri-

nary organs of the human male."

B. S., 1876.—"Describe in the order of their frequency the several growths which affect the testis, and mention the signs on which you would chiefly rely in the diagnosis of each."

Second M. B., 1875 (Honors).—"What constitutes rape? Mention the lesions which may result from rape (a) in the case of adults, and (b) in the case of children, pointing out the local affections of the genital organs which

may simulate the effect of rape, etc."

Is it surprising that the great majority of the medical graduates view with "detestation" the proposal that women should be admitted to the same degrees as men; the possibility that young women and young men should be subjected to a precisely similar examination, at the same time, and in the same testing-room, upon the topics dealt with in the above quoted questions, and that they should similarly undergo the necessary anatomical and clinical training to fit them for passing such an examination; and, lastly, that women should be encouraged and actively aided to enter the list in honors, in competition with young men at the same table, and, if possible, to carry off the palm for a more intimate acquaintance and

superior knowledge upon such subjects as diseases of the testicles, rape and the like. To my mind the thing is revolting in the extreme, and I believe that when the real facts of the case are known to them, very few non-medical graduates would countenance, in its present form, the proposal to admit women to medical degrees in the University.

CHLORAL-HYDRATE IN DELIRIUM TREMENS .- A short time ago, I was almost despairing of a case of delirium tremens. The man was most violent, and in a fearful state of excitement; and the remedies adopted appeared only to increase his activity and make him more and more unmanageable. The treatment had been Battley's solution in half-drachm doses; afterward pure solution of the hydrochlorate of morphia by subcutaneous injection, as much as one grain repeated every two hours. There was no vomiting of the mixtures given on any occasion; these being, in addition to the liquor opii sedativus just mentioned, half-drachm doses of tincture of digitalis given every two hours, etc. After two or three days of the above treatment, and no improvement taking place. I determined to try the chloralhydrate. Accordingly at 5.10 A. M. I gave him half a drachm (thirty grains), and the same quantity at 5.40. At 6.00, he had a subcutaneous injection of half a grain of morphia. At 6.10, forty grains of chloral were given; at 6.25, two-thirds of a grain of morphia were injected; and at 7.45 he was asleep. The man slept for eight hours, and awoke without headache or other unpleasant feeling except great thirst. He was now supplied with good nourishing food (beef-tea, etc.), and he was put out walking next day. The quantity of the chloral given was one hundred grains, and of morphia one grain and one-sixth, in the space of an hour and fifteen minutes. Previously to the administration of chloral, the pupils were contracted to a point: an indication, of course, that the previous mixtures had been absorbed, but, as we have seen, with the effect only of increasing the excitement. Considering that the preparations of opium given previously had not conduced to somnolency, I attribute this condition to the chloral-hydrate chiefly, if not entirely. In another obstinate case of delirium tremens, in which the usual treatment by digitalis, morphia, etc., was ineffectual, I had recourse to chloral, repeated every ten minutes till one

hundred and sixty grains had been taken. The patient then fell over, and, after sleeping for seven hours, was, on

awaking, altogether a changed man.

I may add that, during the first two doses, there is always increased excitement, the patient becoming garrulous—indeed, *intoxicated*, to all appearance; but this soon gives place to thick speech, inarticulate mumblings, and peaceful sleep.—Dr. J. Farrar.

SLEEPLESSNESS AND ITS TREATMENT.—Dr. Ainslie Hollis, in writing on this subject, maintains that, although the quantity of blood in the brain is diminished during sleep, this diminution is not the sole cause of slumber, for we may have the former without the latter. An increase in the cerebral blood-supply, however, may produce wakefulness, as in the paresis of the cerebral vaso-motor nerves from exhaustion. Sense impressions have the same effect by the continual stimulation of the higher nervous centers. An increase in the velocity of the blood-current through the brain is a frequent cause of wakefulness, as in the irritable and hypertrophied heart. The wakefulness of anæmia is ascribed by Willemin to changes in the nervous elements of the brain, and a consequent modification of the circulation therein.

The treatment for wakefulness he classified under two

heads:

1. The induction of natural sleep.

2. The production of narcosis, or artificial rest.

One of the most efficient means of inducing natural sleep is the application of mustard plasters to the abdomen. According to Schuler, this produces first dilatation, and subsequently contraction of the vessels of the pia mater; changes due to the constriction or dilatation of the peripheral current-areas of the skin. Preyer, of Jena, advocates the administration of a freshly made solution of lactate of soda, or of some milk or whey, on the hypothesis that sleep may be induced by the introduction of the fatigue products of the body. Where the insomnia depends upon brain exhaustion, Dr. Hollis recommends the administration, just before bed-time, of a tumblerful of hot claret and water, with sugar and nutmeg. The alkalies and alkaline earths are useful when acid dyspepsia is associated with insomnia. Electricity has been used in the paresis of the vaso-motor nerves due to an overworked brain. In hot weather, sprinkling the floor of the sleeping apartment with water lessens the irritant properties of the air, adding much to the comfort of the sleepers; possibly the quantity of ozone is at the same time increased.

The artificial rest obtained by the use of narcotics seems to be due to a direct interference with the functional activity of the nervous system. Dr. Hollis does not consider the bromides to possess hypnotic properties, although they undoubtedly act as sedatives on the nervous system, and as such may occasionally induce sleep.— The Practitioner.

A LADY PRACTITIONER IN DISGUISE.—A Dr. James Barry served as surgeon in the British army for more than fifty years, during which time he held many important medical offices, and gained an enviable reputation as a cool and skillful operator. He was of a very irritable temper, and, while stationed at the Cape of Good Hope, fought a duel. Notwithstanding frequent breaches of discipline, he attained high rank in the army, served in many parts of the world, and in 1865 his name stood at the head of the list of inspectors general of hospitals. In July, 1865, the eccentric surgeon died, and the next day it was officially reported that the doctor was a woman. No suspicion of the surgeon's sex seems to have been entertained, even by his most intimate associates. In addition to his other accomplishments, Dr. Barry was an inveterate smoker.-New York Journal.

THE PANCREAS IN DIABETES .- M. Lancereau laid before the Academie de Medicine some specimens exhibiting extensive lesions of the pancreas in subjects of diabetes, and having related the histories of the cases whence they were derived, and referring to others already on record, went on to say that it was thus evident that, at least in some cases, diabetes is accompanied by great alterations in this organ. In these cases the progress of the disease has been relatively rapid, and has been attended by polypha. gia, polydipsia, excessive emaciation and abundant glycosuria-in fact, by all the characteristics of saccharine diabetes. So, also, animals, from which the pancreas has been removed, became voracious and rapidly emaciated, and die very quickly. There would seem, therefore, to be no doubt that there is a casual relation between these changes in the pancreas and the disease in question.

form of diabetes may be distinguished by the relatively rapid occurrence of emaciation with polyphagy and polydipsia and by the peculiar character of the alvine evacuations. Its prognosis is most unfavorable; the indication for treatment consists in suppressing alimentary substances that are digested by the pancreatic juice, in favor of those which undergo digestion in the stomach.—Gaz. des. Hop.

Poisoning by Salicylate of Soda.—Dr. Peterson(Deutsche Med. Wochenschrift—Canada Lancet) mentions a case in which 26 grammes of salicylate of soda (390 grains) were given by mistake in twelve hours. The victim of the mistake was a girl of fifteen years. The brain symptoms were most prominent and persistent. These were delirium, partial deafness, ringing in the ears, difficulty in seeing at a distance. There was strabismus and extreme mydriasis. When rational, she complained of headache. The delirium lasted eight days. During that time everything was blank. There was no depression of temperature. There was hoarseness, and respiration increased to forty per minute, and the skin covered with profuse perspiration. Also, dilation of blood-vessels in different parts of the body.—Detroit Lancet.

Acetic Acid in Psoriasis.—Dr. Jansen (Revue Medicale) finds acetic acid the most effectual application. After a bath of hot water and soap to soften the crusts, the scales are to be removed by a "small brush. The acid is then applied by means of a sponge. Very soon the affected parts become pale, then injected, and finally slightly inflamed. There is a feeling of smarting, which lasts half an hour. The crusts fall off, and in some cases appear no more after the fifth or sixth application; in others they reproduce themselves for a longer time, gradually becoming less and less thick. Only one application in the twenty-four hours should be made, and the parts should be carefully bandaged.

New Method of Opening Lumbar Abscesses.—Mr. Osman Vincent described to the Harveian Society a method by which he had opened eighteen lumbar abscesses without a fatal result. The abscess was first opened, and then injected with a solution of equal parts of sulphurous acid and water, after which a poultice was put on. Next day the injection was renewed and some tenax applied.

The treatment went on till the cavity healed up. The injection sometimes gave pain; sometimes the fluid returned clear, and at other times black. When sulphurous acid was injected it acted upon the pyogenic membrane, and then pus did not re-form.—Detroit Lancet.

Cyanide of Zinc in Facial Neuralgia.—Dr. Luton, of Rheims, states that he has obtained excellent results from the cyanide of zinc in rheumatic facial neuralgia simulating cerebral rheumatism. He relates two cases in which, with intense facial neuralgia, there was continued and ardent fever, cephalalgia and tenderness, on pressure at the points where the nerves emerged. The symptoms rapidly abated under the use of the following mixture: Cyanide of zinc, one-fifth of a part; distilled cherry laurel water, twenty-five parts; and tragacanth mucilage mixture, one hundred parts. A tablespoonful from hour to hour.—Medical and Surgical Reporter.

PICRATE OF AMMONIUM IN INTERMITTENT FEVERS.—J. W. Snider, M. D., states that he has used the picrate of ammonium with uniform success in the treatment of intermittent fevers during the autumn just passed. Some of his cases had been treated unsuccessfully with arsenic and the alkaloids of bark. He gave to adults one grain of the picrate, twice each day, until six doses were taken, and, after the lapse of a few days, repeated the dose, to make sure of complete success.—Ohio Medical Recorder, November, 1877.

Incompatibilities of Strychnia.—Bromides, iodides and chlorides of sodium or potassium produce a decided precipitation in solutions of strychnia. Dr. A. B. Lyons reports in the Detroit *Medical Journal* a case where serious poisoning was caused by the last dose of the following:

Restrychnia - - - - gr. ii.
Bromide of potassium - - - - 5ii.
Syrup, water - - - aa 5iv.

DEATH FROM A NEEDLE.—A case is reported in which a patient died from hemorrhage from a punctured wound in the aorta caused by a sewing needle which had been swallowed. Part of the needle was embedded in the œsophagus.

EDITORIAL.

To Subscribers.—We are aware that times are hard, yet we hope that subscribers will find it convenient to remit the small amounts of their subscriptions. We are under the necessity of paying cash for work and material, and our subscribers should not make it necessary for us to advance money from our pockets in order to furnish them with current medical literature. Let each one, therefore, send on the price of his subscription without delay.

LAID OVER.—In the present issue of the Medical News appears the Valedictory Address of Dr. G. W. Underhill, which we feel sure our readers will find interesting. It contains not a little matter of interest to all physicians, among which will be found the decision of a higher court in Indiana in regard to the remuneration of medical experts when called upon to give testimony.

In consequence of the address occupying so much space, we have been compelled to lay over, until next month, some articles that we had intended to appear in the present number. Among them is an interesting article by Dr.C. S. Muscroft, of this city, "On the Prevention of the Spread

of Syphilis." It will appear in the April number.

The Young Scientist.—This is a popular record of scientific experiments, inventions, and progress for young people. As stated by the publishers, the bane of this country is the prevalence of demoralizing juvenile literature. The way to counteract this tendency is to give the boys (and girls, too) something to do. The Young Scientist will point a way to intelligent recreation and active employment. It gives plain direction for constructing all sorts of apparatus, making tools, elucidates mechanical science, and scientific principles of every kind that are easily understood. Published monthly at fifty cents a year. P. O. Box 4875, New York City.

WM. R. WARNER & Co.'s SUGAR-COATED PILLS OF PHOSPHORUS.—We are indebted to this house for a number of samples of their sugar-coated phosphorus pills. Their labors, since 1870, on these pills have achieved a perfection unequaled of pillular form for the administration of the valuable remedy, phosphorus, in an acceptable, con-

venient, and potent, yet harmless form. The mass within the sugar-coating is soft, has the odor of phosphorus, is luminous in darkened places, has no lump of phosphorus as it is combined when in solution, and, finally, it is perfectly protected from oxidation or the conversion of the phosphorus into phosphoric acid. These statements are certified to by Mr. A. E. McLean, analytical chemist and

microscopist, of New York.

Phosphorus is becoming to be more and more employed as a remedy. It is much more effective in its metallic state than in any other form; and the best way to exhibit it in that condition is by sugar-coated pill. In many cases of paralysis, impotency, and many other affections in which there is a marked want of nervous action, it has brought about most beneficial results. In combination with strychnia, nux vomica, iron, quinine, belladonna, and other tonics and nervines its effects are greatly improved. Messrs. Warner & Co. have numerous combinations of the kind.

We hope our professional brethren will try these pills.

HOMEOPATHY WITH MODERN IMPROVEMENTS.—It is a well-known fact that many physicians belonging to the homeopathic school do not strictly adhere to the precepts of Hahnemann, and the Homeopathic Society of New York City has just taken an important step toward sanctioning this departure. On the 8th inst. a resolution passed by a special meeting on the 8th of February was taken up. It reads as follows:

"Resolved, That in common with other existing associations which have for their object investigations and other labors which may contribute to the promotion of medical science, we hereby declare that, although firmly believing the principle 'Similia similibus curantur' to constitute the best general guide in the selection of remedies, and fully intending to carry out this principle to the best of our ability, this belief does not debar us from recognizing and making use of the results of any experience; and we shall exercise and defend the inviolable right of every educated physician to make use of any established principle in medical science, or any therapeutical facts founded on experiments and verified by experience, so far as in his individual judgment they shall tend to promote the welfare of those under his professional care."

An earnest and practical discussion ensued. Some of the members were strongly opposed to the resolution as a "lowering of the homeopathic flag." They declared that if eclectism was adopted the eclectic doctors "would beat the homeopathic every time," and it was only by a rigid adherence to the law and the practice, as laid down by Hahnemann, that the latter could "tower above and overshadow all other practice." On the other hand it was maintained that the progress of medical science necessitated new modes, and that Hahnemann, if alive, would be up with the times. The resolution was finally put to vote and lost by a vote of sixteen in the negative and thirteen in the affirmative. The yeas and nays being called for, a tie resulted. One member, who had not voted (Dr. Holton), was urged to save the President the responsibility of depositing a casting vote, and he complied with the request by an affirmative vote. The resolution was then adopted, though a formal protest was made by a number of physicians.

CUBIC CAPACITY OF THE SKULL. - Few are aware of the great difficulties that present themselves in any attempt at measuring accurately the cubic capacity of the skull, though Professor Flower devoted nearly a whole lecture to an account of the various methods in use among anthropologists, last year, in his lectures at the College of Surgeons. Water, mercury, sand, millet-seed, white mustard-seed, pearl barley, intracranial casts of plaster of paris, etc., have all been employed, yet none are quite reliable, and it is difficult to obtain the same numbers twice consecutively, even when the same substance is used by the same observer. Professor Wyman, measuring the capacity of the same skull with different substances, obtained a minimum of 1.193 with peas and a maximum of 1,313 with fine sand, which shows how great a variation may occur when different materials are used even by the same experimenter. The numerous investigations of Vogt and P. Topinard show that the proportion of the mean absolute capacity of the skull in the anthropoid apes as compared with man, taken as 100, is from 30.63 (Vogt) to 32.66 (Topinard), so that man has two-thirds more brain than animals; and M. Topinard remarks that, taking into account the bulk of the body, it is not three, but four or five times larger, and consequently that, even if on zoological considerations we are included in the same group with them, we are still separated by a very wide interval by the organ which ministers to our intelligence. A short account is given of the convolutions of the brain, and in the second part

he gives some very interesting particulars of the relative size of the brain in different races. A table drawn up by Parchappe gives the following relative weights in grammes, drawn from a large number of experiments: English and Scotch males 1,427, females 1260; French males 1,334, females 1,210; German males 1,382, females 1,244; African negroes 1,238, negresses 1,232. The various forms of craniometers and the description of the fixed points from which all measurements should be taken, and for which anthropologists are much indebted to M. Broca, are well given.

Foreign Bodies in the Nose and Ears.—In a late number of the Lancet we gather some curious information in

regard to foreign bodies in the nose and ears.

Foreign bodies, such as cherry stones, locust beans, brass rings, slate pencils, screws, buttons, pieces of wood, peas, etc., are not unfrequently met with in the aural and nasal cavities of children, and even in adults. Such substances have been known to remain in one or the other of these cavities for well-nigh a lifetime, causing little or no inconvenience. Thus a case is related of a lady from whose nostrils a foreign body was dislodged during the act of sneezing; it was found to be a button which had belonged to her little brother when they were both infants. Another case is recorded in which a piece of slate pencil was removed from a woman's ear, which had been put there when she was at school "forty years before." And a third instance, a patient of Mr. Winterbotham, of Cheltenham, in which a cherry stone had been in the ear for sixty years. Mr. Hargood also recently reported the case of a gentleman, aged forty-one, from whose ear a piece of cedar wood was removed by syringing. "The patient remembered distinctly the fact of its introduction when he was a boy at school, at least thirty years before. No attempt had been made to extract it, and its presence had not troubled him until now."

But sometimes serious consequences happen, as facial paralysis. A case is reported resulting in facial paralysis,

with death from meningitis.

Living larvæ have been found in the meatus of the ear. Convulsions followed the presence of the larvæ. The gentleman recovered, but remained deaf.

In 1868, a man was admitted into Westminster Hospital,

who had a swelling on the lower lip on the left side. He had been told he had cancer, and sought advice on that account. It appeared that he had fallen from a scaffolding, two or three months previously, and had sustained considerable injury to his scalp and face, and his lower jaw was fractured. He had been a patient elsewhere, and stated that when he was under treatment he had fits. On examining the parts, the lip was found a good deal swollen, and rather tender to the touch. A puncture was made, when the knife impinged upon a hard substance, which proved to be a portion of the crown of the left incisor of the lower jaw, which the patient said he missed after the accident.

Physical Culture.—A Miss Bertha Von Hillern, a young German woman, twenty-four or twenty-five years of age, has been giving, in this city, quite recently, examples of strength and endurance, brought about by what she terms her system of physical culture. This system, we believe, consists in regularity of habits, attention to eating and drinking, and every-day exercise by walking—the distance walked each day to be kept steadily up to the point of endurance. She gave, at Greenwood Hall, two exhibitions of walking—the first time walking eighty-nine miles in twenty-six consecutive hours, without sleep, the last time walking one hundred miles in twenty-eight consecutive hours, without sleep. Each task seemed to be easily accomplished in the time allotted for it, and, to all appearances, could have been done in a considerably shorter period of time. Her first walk commenced precisely at eight o'clock on a Friday evening, and was completed a few minutes before ten o'clock, Saturday evening. On the following morning, Sunday, being a pious Catholic, she arose at five o'clock and walked to church, a distance of four or five squares, and back. Her first rest during this walk was at the end of eight hours, when she rested an hour. One other time, we believe, she rested nearly an hour. Toward the close of the walk she rested frequently a few minutes. Her miles were made in from twelve to fourteen minutes each—varying but little from first to last.

 were not given the pulse and respiration rates. When she came off from her walk, her pulse, as stated to us by Dr. C. S. Muscroft, was from 96° to 98°, temperature 986°, respiration 18 to 20. This is certainly a most remarkable exhibit. She said she was tired, sleepy and hungry.

The exhibitions of Miss Bertha were attended by the best class of people of the city-physicians, ministers, lawyers, merchants and their wives, and other members of their families. There was an entire absence of all sport-

ing people.

It is not to be presumed that every one, especially every . lady, could succeed by training in acquiring the strength and endurance of Miss Bertha Von Hillern, although she shows no more of it in her appearance than any ordinary little woman (she is of less than medium stature and weighs about 100 pounds); but that very many could there is but little doubt; and that, too, without inflicting injury upon the health, as inducing heart affection. In ancient times, not unfrequently, circumstances made it necessary for quite as much physical exertion to be endured, by both men and women, as that to which she was subjected in her walks we have mentioned; and yet we have no reason to believe that disease was entailed thereby. The history of the aborigines of this country shows that it was not an uncommon occurrence, in consequence of the sort of lives they led, for those of both sexes to be subjected to trials of endurance much greater than that she underwent, and yet they were not near so subject to organic disease as those who lead the slothful lives of our present civilization. Prize-ring men, we know, are apt, but not always, to break suddenly down right in the prime of life-heart disease, tuberculosis, or some other organic affection arising-but the exercise of them training is of a much more violent character, both as regards muscular exertion and diet, and, besides, they are subjected to most severe poundings of their bodies by the sledge-hammer fists of their adversaries, one blow from which is enough to kill an ordinary man. Many unfavorable prognostications were made by some of our city physicians as to the ultimate results of Miss Bertha's walks upon her health, but we can not assent to them.

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PRIGINAL CONTRIBUTIONS.

Parasites, and their Strange Uses.

A LECTURE, DELIVERED IN THE MEMORIAL HALL, MANCHESTER, ON WEDNESDAY, NOVEMBER 12, 1873.

BY T. SPENCER COBBOLD, Esq., M.D., F.R.S.

Communicated to the Cincinnati Medical News, by the Author.

LADIES AND GENTLEMEN:-Lest the subject of my discourse this evening should have alarmed some of you who may not unnaturally entertain a horror of parasites and parasitism, I wish to remark at the outset that the study of these creatures is of the highest interest, and really It is attractive because it is full of quite attractive. novelty; yet more attractive because the study opens up to our view some of the strangest biological phenomena of which the human mind can take cognizance; and yet most attractive in this utilitarian age because a knowledge of it brings with it a rich reward practically, enabling us to do effectual battle with some of the many ills of life to which our human flesh is heir. I would have you observe that in order to acquire satisfactory knowledge of this subject, or indeed to be enabled to interpret aright any of Nature's secrets, you must allow me to say-enter upon all such studies in a right frame of mind. The prime requisite in the study of this subject is a matter of personal and moral discipline. This discipline consists in a rigorous determination on the part of the student to disposses his mind of all preconceived opinions whatsoever, and in an attitude of child-like simplicity to seek truth only for truth's sake. Those people who with nervous anxiety are forever seeking to reconcile the conclusion of modern science with the ideas of their forefathers are likely to remain just as ignorant of the true value and significance of Nature's teachings as all their fathers were. The mind must be absolutely unfettered and free if it would comprehend the facts of this or any other department of science; and in science, as in the military art, our motto must be "Onward."

Let us endeavor, in the first place, to acquire a large. healthy and rational grasp of the general, in contradistinction to the special, facts of parasitism. You are aware, doubtless, that we are in the habit of speaking of the plants or the vegetation of any given territory as constituting the "Flora" of that territory. In like manner, also. you are probably aware that we are in the habit of speaking of the animals living in any locality, or occupying any area or territory, as constituting the "Fauna" of that territory. Thus, we have a British Flora and a British Fauna. We have other Faunas and Floras corresponding with various areas over the earth's surface; in this way constituting insular Floras, continental Floras, and soforth. Now, if you would entertain an adequate conception of the relations subsisting between the parasites of which I am now about to speak and their bearers-that is the creatures in which they dwell-you must look upon each individual bearer of the parasites as forming a territory, or an area, in which these creatures legitimately take up their abode. This abode is assigned to them for the purposes of their existence; and constitutes, therefore, in the manner I have sought to explain, the Fauna of that territory. Thus we have a human internal parasitic Fauna. The human territory is occupied by parasitic inhabitants, which might, if they could speak, claim as much right to occupy that territory as you and I have to occupy British territory. The human parasitic Fauna indicated on the list before you represents the different kinds of creatures which may thus separately consider themselves entitled to take up their residence in the human territory. That list only embraces the series of internal parasites. There is also an external group, or parasitic Fauna; but of the animals comprising it I do not propose to speak this evening. Pursuing our simile, we have, in the next place, a canine territory, which is occupied by creatures whose strange names I do not want you

to remember; and, therefore, I shall not attempt to explain their precise meaning. You will next observe that I have placed here a list of the inhabitants of the bovine and the ovine territories; or, in plain English, the names of the various species of internal parasites or entozoa of the ox and sheep. So, also, you notice that we have here suspended a list of the internal parasites of the horse. Some of these parasitic forms are drawn and exhibited on the walls of the room; and of certain of them I shall again speak more particularly. Now, I would have you observe further in this connection, that the creatures which thus reside in the different territories are not all of the same kind: they vary much in appearance, form and structure.

You will notice in the lists before you that the names of the species of creatures inhabiting these several areas are differently colored; and that arrangement is designed to indicate the fact that they belong to separate and distinct groups of creatures. Confining our attention to the internal parasites, we call them technically the Entozoa or the Helminths. Those of you who are not Greek scholars may wish to understand that this term means "life within," that is, internal life, or internal parasites: and, further, I must tell you that those people who specially study these creatures are called Helminthologists. The student of parasites, by whatever name you call him, recognises four principal kinds of creatures which reside in these various territories. They are named respectively (as you see on the smaller list), first, the Cestoidea, which means tape-worms; secondly, the Trematoda, which means fluke-worms; thirdly, Acanthocephala, which means thornheaded worms; and, fourthly, Nematoidea, which means thread-worms. I must in the next place explain to you that these are totally distinct classes of parasites; though all four of them possess one character in common, namely, that they reside inside their bearers and not outside. They are therefore, as before remarked, called Entozoa, in contradistinction to the external species which are technically known as the Ectozoa. All those parasites whose names are colored red in these lists are what we call fluke parasites; those that are colored green are called threadworm parasites; those that are colored blue tape-worm parasites. We shall now principally concern ourselves with the flukes.

The Trematoda derive their name from a Greek word

meaning "perforated." The group, termed Acanthocephala, is not represented by any resident belonging to the territories placed before you. However, I have brought one drawing illustrating an acanthocephalous parasite. This Echinorhynchus, as it is called, is a singular-looking creature. It has a large head, narrow neck, and thick body. Its large head is covered all over with hooks. The species here figured is one that lives inside the whale. Other allied species dwell in cetacean animals, which, of course, must needs be "very like a whale." There is one of our domesticated animals which also has the privildge of harboring a species of Echinorhynchus. The animal to which I allude is that delectable creature called the hog. Neither ourselves, nor the horse, ass, ox, sheep, goat, dog, or cat, are liable to have the privilege of entertaining this singular acanthocephalous guest. The expression "territory" is so long a word that we find it more convenient to call the bearer of the parasite the "host;" the parasites themselves being the "guests." We shall in future generally adopt these shorter terms. If a person is invaded by a parasite he is said to be the host. because he entertains the guest. Of course the guest is usually an unwelcome one; however, I have known guests of this description cultivated or farmed in the human territory or host. For example, when I was, some years back, performing a number of experimental researches, I required a large quantity of parasites to experiment with; and one human host was kind enough to rear an immense number of these creatures in his own territory for my especial advantage. I usually gave him a shilling whenever he brought me a bottle full. But I said just now that I would explain a little more clearly, if I could, the nature of these three groups, Trematodes, Nematodes, and Cestodes. You must have some general notion of what a fluke consists before I attempt to enter into details. Here is a series of drawings placed before you, collectively representing many different kinds of flukes.

I daresay you would wish to know the meaning of the term "fluke." It is an old word, which signifies anything flat. When a person speaks of a "fluke" at billiards he means that the stroke was a stupid one, or that of a "stupe" or "flat." The North Sea sailors call the divisions of the tail of the whale "flukes;" and when the great whale takes a plunge downward, up goes the tail, and the

sailors then shout out, I'm told, in not very good grammar, "There goes Flukes." These parasites are called flukes, therefore, merely because their bodies are flat. You will probably recognize in this drawing the common fluke, which abounds in cattle and sheep, and gives rise to the formidable disease vulgarly called the "rot." Hundreds, thousands, and millions of sheep sometimes perish in a single year on account of the prevalence of the rot epidemic, and this disorder is entirely due to the prevalence of the parasite in question, which takes up its abode in the liver of the ovine host. Here is a series of other flukes. You will see that after all they are not such very horrible looking creatures. They resemble so many unrolled and extended leaves. Their beautiful branching organs here exhibited are connected with the digestive system of the animal, forming, in fact, branching stomachs; and there are other sets of branching organs which form a system of vessels centaining a fluid of a peculiar character. I will mention where one or two of these species come from. This (Fasciola hepatica) is the one from the common sheep, but occasionally the human host is permitted to have the privilege of entertaining the parasite. It has only been found in the human subject in eighteen or twenty separate instances, and is therefore an extremely rare human parasite. You need not alarm yourselves about this worm. Don't fancy when you are enjoying your mutton that you run any chance of infecting yourselves with this entozoon-nothing of the sort, I assure you. You are perfectly safe. Now here is another still more remarkable fluke, which fortunately does not exist indigenously in this country. It is called the Bilharzia, a name which I gave it in honor of its original discoverer, Dr. Bilharz, who is a physician practising at Cairo. I can not tell you all about it; but it is a dreadful little creature, giving rise to a most terrible disorder in the human subject. Hundreds of thousands of the eggs of these parasites are sometimes found escaping from the body of a single person. The creature is a true fluke, but it is not so flat as flukes in general. It has, you see, a round body, with a sucker at the anterior extremity. About its internal structure I can not now speak, because it would take up too much of our time. Here is a little fluke (Distoma lanceolatum), also from cattle, and about half an inch long. Here is another pretty little fluke. called Polostoma, which has a lot of little suckers. These were once thought to be mouths, hence its name. Here, again, is a beautiful little parasite, residing in the frog. Put it on the slide under the microscope, and you would exclaim, "What a charming creature." It is an exquisite object, only about one-fourth of an inch long. The frog is a host that is liable to entertain a considerable series of guests. Here is a fluke from the hedgehog; beside it is another one from the fox. Here are also two others I had the good fortune to discover between twenty and thirty years ago in a giraffe. You will notice a general family resemblance between this fluke and that of the sheep. They are, as it were, first cousins. The blue lines indicate the digestive system. Now, instead of having a simple stomach, such as we are favored with, it has a complex series of tubes dividing into a number of little branches, like the ordinary veins of a leaf. You will observe that the branches pass downward and outward. In another view of the same parasite you have the watervascular system represented. So much for flukes.

Now we will examine a few of the next group or series, which is colored green on the list. These parasites are called round worms and thread-worms. The creatures figured here are illustrations of Trichina. You have heard a good deal lately of the flesh-worm called Trichina spiralis; some persons pronounce it Trichina, but it is more correct to give the second vowel short, in accordance with the Greek root. I wish to point out that these various illustrations represent forms of Nematoidea, or round worms. Here is one called the Trichocephalus, or whip-worm, because it is shaped like a whip. Here are others more resembling common earth-worms, but they have no sort of relation structurally to those inhabitants of the soil. Worms form a most unfortunate and improper collective name for these parasitic creatures; but I suppose we must retain the barbarous nomenclature, as a concession to time-honored ignorance. There is one more group, namely, the Cestoidea, or tape-worms. Here we have a truly singular series of creatures. Most people have heard of such worms; but few will admit that they have seen any. There is one figured which is called · Tania Mediocanellata. It is the tape-worm which the human host obtains when he eats underdone beef. It is the most common form of human tape-worm. It is quite a

delusion to think that the pork tape-worm is as common as that derived from beef. I can speak quite confidently on this point, because I have investigated the subject There is the creature represented at full length. It has four suckers, but no hooks. That one over the fireplace is from pork, and is recognized by its head having a series of hooks in addition to four suckers. The tapeworm is a most remarkable creature. It consists of a head and a segmented body, which is sometimes twenty feet long or more. The next question is as to the nature of those joints or segments. Each one of those joints or segments is what Prof. Huxley would term a zooid. It is a sort of semi-independent imperfect individual. In fact a tape-worm is not a single creature, but a multitude of creatures all arranged together in single file. You probably have some acquaintance with those pretty little objects which are found on the seashore-zoophites, polyps, with numerous heads. Now the compound polyp is a colony of individuals branching out like a tree. But here is a colony of polyps ranged in single file like a regiment of soldiers; and thus one long creature is produced by a number of little beings adhering together; some 1,200 individuals being joined together so as to form a colony. The marvelous changes through which that creature passes I have not now time to dwell upon. My present object is merely to give you a clear and definite idea of the three principal groups of guests that have the privilege of residing in the human and other hosts, and to show that they are essentially distinct, both structurally and generally.

Here for the present I pause to ask you a question. In the face of these few data which I have laid before you, can you, I ask, be satisfied with the old and erroneous notion that these parasites are merely the results of disease? Or, again, can you be satisfied with that merely modified conception which would make it appear that these creatures only exist in hosts previously enfeebled by disease? Is it not already palpable to you that such popular notions as these are utterly unworthy of your regard; that they are altogether out of harmony with other conclusions of a like kind deduced from scientific observation? If you have a whole series of organized beings taking up their residence in territories (granted that they are peculiar territories or areas), each one of

which is furnished with organs enabling it to occupy that territory to its own advantage, how is it possible, I say, to be satisfied with those old teachings which assert that all these wonderfully-organized creatures are the mere result of disease? Some persons, indeed, have been foolishly persuaded to look upon these parasites as so many tokens of divine chastisement! Such an interpretation of natural phenomena is a mere farce. Here, you observe, is a series of natural areas, these areas being respectively occupied by highly-organized creatures, each of which is fitted, most wonderfully, to take up its singular and suitable abode. I speak earnestly on this subject, because I am most desirous (as one who has worked at the subject for many years) that healthy, rational, and true views should be taken up in this connection, and that the old ones should be abolished. You must pardon my freedom if I appear unduly anxious on this point. I entreat you to be guided only by the teachings of reason as opposed to the dogmas of a carefully nurtured and educated ignorance. Whether you deal with subjects of this kind, or whether you are working at certain other departments of science which in some phases are justly considered far more delightful—the charms of such beautiful subjects of study as spectrum analysis must be great for those who pursue them—there are, you may be sure, great lessons to be learnt. Even in the study of these little despised parasites there are teachings to be deduced which are in harmony with those derived from the more attractive sciences. And I would also say in this connection from conclusions which have been forced upon me by conversation with many who came to see me about such subjects—that some people's ideas seem so cramped and compressed that they might very well, without much stretch of the imagination, be placed within the circumferential limits of an ordinary nut-shell. But, happily, one delights to think that in Manchester, at least, there are many minds of a far different stamp; so different, indeed, that to speak figuratively, the range of their ideas would require an area whose diameter should extend from this platform to the glorious orb which rules the whole of the planetary system.

Well, now, to pass on to the special part of my subject, let me give you a few details respecting the life history of one or two forms. Perhaps I can not do better than

say something about one I have alluded to already, namely, the little fiesh-worm; a parasite which takes up its abode in the human area (Trichina spiralis). I hold in my hand a simple microscopic slide, and if this small specimen of flesh were placed under a microscope, you would observe one hundred parasites at least. Now supposing the muscles of any human individual were infested with the parasite to the extent represented by this little specimen, you might probably state without exaggeration that he had the privilege of entertaining fifty million guests! In some instances more have been harbored by a single host. I happen to have examined part of the flesh of an unfortunate foreigner who was killed in the streets of London, and who must, during life, have entertained a hundred million of these guests. If you examine a portion of trichinized flesh under the microscope, or even with a pocket lens, you will often notice an appearance similar to that which is represented in this diagram. You observe here a portion of simple flesh, and a number of little capsules, lemon-shaped and spindle-shaped. In each one of these capsules is rolled up a little flesh-worm; so that if you take one and magnify it still more highly, you will get the appearance presented in this second diagram.

Here is one of the Trichina rolled up inside its capsule. Here is another representation of the same thing from a cat. You observe some eight lemon-shaped capsules, and in each one of those capsules is a little parasite. Now you would like to know some further particulars of the life-record of this parasite; how it gets into the human territory, and, in short, all about it. Those who are fond of underdone pork, and who happen to persevere in eating a quantity of it in the trichinised condition, will assuredly be liable to infect themselves with the parasite. The flesh of the pig is apt to contain these small-capsuled Trichinæ. They are so small that their length does not exceed the $\frac{1}{25}$ of an inch from head to tail. When the consumer has eaten his meal (our friends the Germans are very fond of eating raw pork) he will, if he has swallowed half a pound of flesh, have taken into his stomach many thousands of these little parasites. But they are only larvæ; they are in a juvenile state of development; and you will say, therefore, that they would do him no Far otherwise. Although they are only in the larval stage of development, it suffices for them that they re-

main inside the new bearer—they are borne from the intermediary host, the pig to the human being-I say it suffices for them to remain forty-eight hours, for they will, by that time, have become converted from the larval condition of growth into the mature adult Triching. Their growth is very rapid, and when they have arrived in the alimentary canal of the human bearer or host, their size becomes greater, but yet not very great. I have both males and females figured here. The male Trichina is only $\frac{1}{18}$ of an inch long, and the female, although she is very much larger, only & of an inch long; so, after all, it is a very tiny parasite. Small though it be, it is able to produce wonderful effects. When they have been comfortably lodged in our interior for six days, by the end of that time an immense number of little Trichina, the progeny of the fullgrown parents, make their appearance. They swarm out of the parent Trichina by hundreds, thousands, and tens of thousands; thus collectively amounting, in a single bearer, to many millions. Well, what becomes of them? They have got into the alimentary canal. The embryos are very minute, not more, perhaps, than the thousandth of an inch long in the first instance. Their smallness, their toughness, their strength, and their armed mouths, enable them to bore directly through the walls of the alimentary canal, and thus the progeny is dispersed in all directions. They bore through the tissues and make their way to the surface of the body; they stop at nothing; they pass through almost every structure except bone, until they arrive at the muscles. They even pass through the heart; not finding its muscular substance a suitable permanent residence. During these wonderful wanderings or migrations (for all parasites have a tendency to wander or migrate), you have, as it were, an army of say fifty millions of these liliputian creatures; and the consequence is that the unfortunate host suffers the most agonizing pains. imagines perhaps that he has got the gout or rheumatism, when it has nothing to do with rheumatism or gout, but is simply a disorder caused by the wounds inflicted by these little wretches. And if he happens to have eaten very heartily of the trichinised pig, of course he stands a chance of being killed by these little creatures. What is enjoyment to them is real pain and sorrow to him. they have bored their way through the tissues (supposing he does not succumb to the wounds inflicted by them)

they settle down in his muscles in place of the pig's, and there they make to themselves comfortable residences. These residences show themselves ultimately in the form of little capsules, such as you see figured in the diagram, and there they remain. Then you will say, "What becomes of them?" They simply wait there hoping that some one will come and devour the host; for if any one should play the part of cannibal (and there are cannibals still in existence), he who played the part of cannibal would in his turn be trichinised. If the human host is not devoured, what happens? A natural cure is effected. It seems to be the prerogative of nature in all cases where wandering parasites get into the human territory, that they shall live there for a certain time only; this length of time varying with different species, but in all cases, sooner or later, they perish by the process which is called calcareous degeneration—they become converted into little particles of lime; and thus the cure is effected. Such are the strange phenomena undergone by the little flesh-worm. One of the most interesting points about it is the rapidity with which all the processes of development take place. You have these creatures passing from the capsuled condition to the adult condition in two days; from the adult the eggs are given off; their contents in six days more being converted into little embryos, which pass through the tissues of the ultimate bearer to his muscles; so that in a period of three weeks, altogether, the whole life-cycle of the individual is completed. more marvelous series of changes in the life history of this group of parasites is not to be found.

You must not, if you please, hold me responsible for the precise title of the lecture, this evening. Not that I have to find fault with it; for, perhaps, it was the very best that under the circumstances could be offered. Nevertheless, it may have been a little misleading. You will notice in the announcement that something is said about "their strange uses." Now, that expresson—"their strange uses"—I take to be a concession to popular ideas. "Their strange uses!" Are there not, I would ask, some people who really still believe that everything that has been created has been made especially for man's benefit? I do not think that there are many who still entertain notions of this sort; and when they see the term, "their strange uses," they perhaps think there must, after all, be some-

thing good in these things, or some special purpose in man's favor.

Therefore you will ask the question, "Could we not get on very well without them?" I certainly think we could. I do not think that there is any necessity that we should be trichinised, or that we should play the part of host to these creatures. Nevertheless, as a matter of fact, hundreds and thousands of people in Germany are trichinised, and scores of persons have perished of late years from the Trichina. Then you will say, "What general conclusion can be drawn from the data given? What is the real part these creatures play in the economy of nature?" The question is applicable not only to these Trichina, but also to other kinds of parasites, some of which pass through

far more astonishing transformations.

Well, that question could be answered in two ways; first, as regards the creatures themselves, and, secondly, as regards the creatures they inhabit. You must meet the question as follows: I would say, as regards the creatures themselves, that the part they play in the economy of nature is none other than that which is played by all carnivorous animals; for, as it was admirably put by Prof. Leuckart some years ago, whenever an animal is too weak or insufficiently armed to overcome and destroy another creature, to which, or upon which its instincts direct it to seek for food and nourishment, then it must content itself by robbing the juices of the creature, its flesh, its blood, or its tissues. The only difference beween a tiger and our little Trichina is, that the tiger kills his victim by a single blow (in the island of Sinapore 400 natives are killed annually by tigers), but it sometimes takes one hundred millions of these Urichina to overcome the host which it inhabits and victimises. The tiger kills the man to obtain its food; the Urichina penetrates the human frame to seek its food; and there is no essential difference between the tiger and the Urichina in this matter. The part they respectively play in the economy of nature is one and the same. It is a strange reflection! Then there comes the question as regards the bearers themselves. Well, I am bound to say again that there is no evidence to show that any one of the numerous creatures which infest these various hosts is in any way beneficial to them; not in the slightest, except—there is, it is said, no rule without an exception-except in a ludicrous sense. Well, let us take the human host. I have said that we not only entertain internal guests, but sometimes there are external guests, and this is the ludicrous phase of the subject. When residing in a part of London, near Portman Square, I happened to take up my abode in a house wherein dwelt what we call Ectozoa--parasites which are liable to attack not the interior but the exterior. This necessitated my sending to some skilled man who professed to be a perfect "insect destroyer"—in fact, a destroyer of the pest which, in musical phraseology, is sometimes called, very significantly, the B flat. And it happened whilst he was in the house that a lady, somewhat injudiciously, but very naturally, remarked that she could not think for the life of her why these nasty things were created. Whereupon this worthy man who rejoiced in the function of destroying Cimex lectularius, replieddrawing himself up as if his dignity were offended--"And what, ma'am, should a poor fellow like me do for a livelihood if the Almighty hadn't made 'em?" So that you see there is a possibility of some parasites, external if not internal, being useful to certain members of the human race.

Well, but seriously, let us try and tackle this matter a little more closely, for I know it is one of those subjects which, when handled by people entertaining what may be called old ideas, is very apt to produce an unfavorable effect upon the mind. Brought up in the notions of the past, such a person does not like to think that these creatures can have been expressly made to occupy the human and other territories. It seems queer to him that human beings should be infested by horrid parasites, which as they pass through his tissues give rise to pain and trouble; and he is at first inclined, perhaps, to set up a sort of non-Providence theory, and to say, in effect: "Well, that can not be a very benevolent purpose which has animated the author of these creatures. What can be the meaning of it?" Now I have sympathy with people who think in this way, because I once thought so myself. And I daresay that the poet, James Montgomery, hit the mark very closely, when in his poem, "The Pelican Island," whilst referring to the habits of carnivorous animals, and taking the old point of departure, he wrote:-

Harsh seems the ordinance that life by life Should be sustained. And yet when all must die, And be like water spilt upon the ground, Which none can gather up, the speediest fate, Though violent and terrible, were best.

Those were the ideas of Montgomery, and I certainly think that they accord with some of our own. This, as I said before, is just one of those subjects which ought not to be handled by narrow-minded persons. Any one who studies parasites and does not acquaint himself with what is going on in other more noble fields of science around him, is very apt to get contracted views of the economy of nature—is very apt to have small notions as to the why and the wherefore anything was created. But if he will reflect awhile, if he will think of the thousand and one blessings which surround him; if he will reckon up all the multifold advantages which he enjoys as the highest of the creatures occupying this planet, and add up the group of ills on one side and the advantages on the other, then I apprehend (unless his mind is a wretched little one) he will come to the conclusion that on the whole we have much to be thankful for.

If you do not see this, allow me to press it further by evidence before us. Here in common with the canine, ovine and bovine hosts, we share what I call, speaking figuratively, the privilege of entertaining a series of parasites. It is very rare that we have more than one of those visitors or guests at a time, very rare; but see now the advantage that we have over animals. Here we are, placed on a planet which has undergone marvelous changes, and representing the highest outcome of a whole series of developments throughout geologic time; and we share now with these animals this peculiar and disagreeable prerogative. But mark you the difference. Whilst animals are liable to be thus infested, they have not the possession of such a reason and power of acting upon it as we have. Would that the gift were more exercised! We have put into our hands an instrument—this reason -by the aid of which we can not only cure ourselves, or be cured of disorders which are caused by these parasitic creatures when they invade us, but what is better than that, we have—by the aid of science and by no other kind of teaching you may be sure-we have, I say, hit upon a method of preventing these disorders. It is, therefore, obviously and clearly our own fault if we suffer

largely from parasitism. Those who only delight to stifle the intellect, and who would prevent us carrying out our researches, are responsible for many hindrances in this connection. Since we have thus a clear advantage over "the beasts that perish," I hold that we ought to rejoice in the elevated position we occupy. At all events, you may be sure that in viewing such questions as these the larger range of vision you take the more likely are you to arrive

at a healthy deduction from the recognized facts.

I see I have a little more time, and, therefore, I will explain something specially peculiar and interesting. You will remember I alluded to the tape-worm as a colony of individuals ranged in single file, and I spoke of the beef tape-worm in particular. I have performed a series of experiments, and those experiments have resulted in giving us a more perfect knowledge of the entire lifehistory and mode of development of that singular creature. For instance, I will detail to you one kind of experiment I made. I took a portion of such a tape-worm as you see there, comprising several of those joints or segments toward the tail end. Now each of those joints when perfectly ripe or matured contains 30,000 eggs; therefore, you can easily reckon up how many there would be in 12,000 joints, supposing all were mature. I took a number of those joints, I say, and put them into milk to make them easy of administration, and with the assistance of friends fed a calf with them. Well, they went down, and the calf was none the worse apparently. However, after a time -I won't describe to you the symptoms-it was evident that something had happened. Now what had happened Some thousands of eggs had been swallowed. Of those eggs all that were perfectly ripe contained in their interior each a little creature called the six-hooked embryo. This small embryo has a round body, provided with two needles in front, and a pair of hooks on each side. With the two little needles it bores, and with the two pair of hooks, placed at the side, it tears the flesh of the host. When the calf swallowed the eggs, which were conveyed into the fourth stomach, the shell of each little ripe egg was dissolved by the gastric juice; all the little embryos thus making their escape. This was, you see, kindness to the embryos if it was unfair to the calf-communicating pleasure to 30,000 at the expense of one. I believe that principle of action in politics is a good liberal

cry-"good to the many." I hope that similar ideas will be found to animate those who have been elected to-day by your suffrages. The thousands of little creatures, rejoicing at being set free, swiftly made their way through the tissues of the host. The little calf did not succumb to these wounds, as the human bearer often does to the trichinæ, but by our assistance it recovered. Well, we calculated how long it would be before these little embryos would arrive at the higher larval stage of development; and we had indications afforded us that it would be three months. So at the expiration of three months. our calf, which was now a strong animal, was slaughtered -for the market you would say, perhaps. No, not for the market. It was slaughtered in the cause of science and humanity; and when we removed the external parts, it was found that all the muscles, especially the superficial ones, were filled with the higher larvæ of this parasite. This larva, measle, or bladder-worm, is called, scientific-

ally, the Cysticercus bovis.

Now the little larva, when examined, presented an appearance, such as is figured here. I have here also drawings of the heart of the calf, and you perceive that the whole surface of it, and also the interior of the organ, is swarming with these little larvæ. Thus we reared in this calf many thousands of these parasites. Now observesupposing we had sent the calf to market, what would have happened? Every individual who partook of the veal, and who did not in cooking raise the temperature to 145, would undoubtedly have been liable to have had developed in his interior the adult form of this particular parasite. How do we know that? We have experimental proof in various ways. A gentleman in India has lately had the courage to induce a Mohammedan boy to swallow some underdone meat of this description purposely, and the result was that the boy had the privilege of playing the part of host to as many tape worms as he had swallowed examples of this little cysticercus. I hold in my hand the largest specimen I have ever seen; it was brought from India, and was taken from meat served out to our troops there as rations. What happens when the measles are swallowed is this: the bladder-like part is immediately digested, but the head and upper part of the neck are not digested. These latter pass down from the stomach into the alimentary canal, and the head, by

means of the suckers with which it is furnished, then adheres to the lining membrane of the alimentary canal. Then a process of budding commences, and in three months the worm would be fully developed. Now you can not help observing that such astonishing phenomena as these are not the result of disease or accident; they constitute together the life cycle of a creature expressly

organized to lead a parasitic mode of existence.

I never yet heard of an English butcher who had ever seen one of these parasites; and, yet, I am in a position to say that at this moment at least 10,000 persons in this country are playing the part of host to these creatures. Butchers are profoundly ignorant people in this respect. Then you will say, "How do the cattle get the parasites?" I will explain. Millions of these creatures pass from their human bearers every day in this country, with other things that are vile. You know that Shakespeare says, "Evil things do fastest propagate." These evil things make their way into the sewage which it is now the fashion to spread over the land far and wide, and they are thus distributed in millions among the delightful verdure on which the cattle graze. The eggs are thus often taken into the mouths of animals along with their fodder. Every egg thus swallowed from fresh sewage becomes a measle, and every measle that is in the flesh of the animal goes to the market, is sold and eaten, and is afterward converted into a tape-worm, provided the purchaser does not take the precaution of having the food properly cooked. Here is the value of reason. The animal does not thus reason; neither does it cook its food. To avoid these things you must simply have the food well cooked. Do not flatter yourselves that partial cooking will destroy A heat of 160 degrees will be perfectly sufficient, if prolonged, to kill even that disagreeable little creature Trichina spiralis. If the heat goes to boiling point you are perfectly safe; but you know that it takes a long time for a joint to become heated to 212 degrees in the inside. Therefore, the rule is prolonged cooking, and then 140 degrees are sufficient to prevent infection from Cysticercus, and 160 degrees for Trichina, from which latter there is more danger, seeing that they are inclosed in little protective capsules. Allow me to say one or two words by way of encouragement. In this country we have only once had an outbreak of Triching disease, and that was in Cumberland, and quite lately. Abroad this subject excites much more attention, because the habits of the people favor the development of the disease.

It is perfectly possible for those who study this subject to create an epidemic of these diseases; so I recommend you to keep us Helminthologists in good humor, for we could, in revenge, decimate the population of any town in a certain number of months by the distribution of the

germs of parasites.

Such are the results of scientific research. Strange and harsh may sound some of the things I have said; but is it not best to face all difficulties and to tell the whole truth and nothing but the truth—to conceal nothing, but to explain everything openly? I rejoice to have had the privilege of addressing an audience in Manchester, because I was told in London, just before I started, that the people of Manchester had a real sympathy for those who promoted science—for anything, in short, which could benefit humanity in the largest sense of the term. From the highest and best of motives we know that there are people ready to pay their hundreds and thousands in the propagation of ideas which are essentially small, not to say morbid; but how few contribute their aid to advance ideas which are for the advantage of the whole human race? I hope these few parting words will be accepted in the spirit in which they are uttered. I look upon this matter of teaching and giving lectures in public as really a serious thing. We pledge ourselves to the truth; we are earnest men. The gentlemen who are promoting these discourses are effecting a good, the end of which they will not live to see. These beginnings are like the little cloud in the distance no bigger than a man's hand, which, in ages yet to come, will develop into large clouds, sending down refreshing showers, that shall spread intelligence and life and knowledge over the whole surface of the earth.

I see my time is up; I can only say therefore, in conclusion, that if I apprehend rightly the essential objects of these lectures, they may be appropriately summed up as those of mutual improvement and the investigation of truth, the development of the seeds of knowledge and the detection of falsehood, the emancipation of the mind from the fetters of ignorance, and the cultivation of a true humanity by social gatherings and intellectual discourse.

Phosphorus: Its Physiological and Pathological Relations, Remedial Value, Medicinal Properties, and Therapeutic Uses.

[Compiled for the MEDICAL NEWS.]

Physiology furnishes us with a rational explanation of the remedial value of Phosphorus; and it further explains the pathological conditions or morbid states of the system under which it may be administered with advantage. But to many the testimony of clinical experience and the deductions of carefully-conducted experiments are more satisfactory than any theory based upon physiological data, however reasonable it may appear. Many persons think, with Professor Stille, that "simple experience forms the only crucible in which a therapeutical fact or doctrine can be fairly tried; and whatever sustains this test may be accepted as a real and permanent addition to our therapeutical resources." While thoroughly indorsing this opinion, a brief resume of the physiological chemistry of Phosphorus will assist us in estimating its value in medicine.

Phosphorus, it is well known, is a normal constituent of the blood, and a never-failing ingredient in all the more important tissues and fluids of the body. It is a very important constituent of nerve tissue, and is found especially abundant (nearly two per cent.) in the great nerve centers.

In common with *iron*, sulphur and lime, and other inorganic elements, Phosphorus is a very important alimentary principle, and whenever its supply is not in proportion to the needs of the economy, deterioration of nervous tissue and nervous force is an inevitable consequence.

These inorganic elements enter into the composition of the organs by which the conversion of latent into active force is effected. The cerebro-spinal system—the brain and spinal cord and the nerves directly connected with these centers—and the nerves of organic life, (the ganglionic system), which presides over, regulates and controls the functions relating to nutrition and secretion—are consequently structurally enfeebled whenever their supply is abnormally defective.

Our knowledge of the chemical constitution of the

nervous system is confessedly unsatisfactory; it is known however that nerve substance proper contains the following proximate principles, viz., protagon, neurine, fatty matters combined with phosphorus, and bases combined with peculiar fatty acids.

Protagon C₁₇₅ H₂₄₁ O₂₂ N₄ P was discovered and described by Liebreich in 1865, and it is to this principle that the solidity of the brain is thought to be due. It is interesting to know that quite recently three classes of phosphorized bodies have been discovered in the brain, viz., kephalius, myelius, and lecithius, containing glycero-

phosphoric acid as a proximate nucleus.

It would appear, therefore, that the presence of Phosphorus in its normal proportion is necessary to the structural integrity of these important nervous centers-to their growth and development in the young, as well as to their maintenance and perfection in adolescence; and it follows that the evolution of nervous force is mainly dependent upon nutrition, and that it is liable to be exalted or diminished in proportion as this process is perfectly or imperfectly performed. Dr. Flint observes: "When new organic matter is appropriated by the tissues to supply the place of that which has become effete, the mineral substances are deposited with them; and the organic principles, as they become effete or 'are transformed into excrementitious substances and discharged from the body, are always thrown off in connection with the mineral substances which enter into their composition. This constant discharge of inorganic principles, forming as they do an essential part of the organism, necessitates their introduction with the food in order to maintain the normal constitution of the parts. As these principles are as necessary to the proper constitution of the body as any other, they must be considered as belonging to the class of alimentary substances. This conclusion is inevitable if alimentation be regarded as the supply of material for the regeneration of the organism."

We know that every part of the organism is constantly undergoing physiological decay and repair, and this molecular change is a necessary and inevitable condition of life. When, therefore, the balance is lost, and the destructive process from any cause (defective supply of new material, or over exercise of functions) is in excess of

that of repair, the organism falls into decay.

It is essential to the condition which we call health that waste of tissue be duly compensated by the appropriation of new material; and if this process fail, we have, as an inevitable consequence, not only structural deterioration of the organs themselves, but their functions become first weakened, then perverted, or imperfectly performed, and finally completely arrested.

In precisely the same sense that common salt is an alimentary substance, Phosphorus also is food; and it is a notable physiological fact, that those animal and vegetable substances which are richest in this element best sustain brain work, renovate nerve tissue, and restore nervous energy when enfeebled by disease or temporarily depressed by excessive activity,

We have seen that functional activity of the nervous system produces disintegration, and waste of nervous matter; and it does appear that there is an especial relation between the quantity of Phosphorus oxidized and the amount of force expended and nerve tissue destroyed.

Stepping from physiology into the domain of pathology, we find that disease destroys life by using up too rapidly the supply of nerve force. We discover evidence of the fact that excessive activity of the nervous system increases the waste of Phosphorus; and whenever the elimination is increased, nervous force is always reduced, nutrition impaired, the nerve centers are damaged, functional disease induced, and life prematurely destroyed.

In inflammatory diseases of the brain there is reason to believe that an unusually rapid disintegration of tissue takes place, a marked increase of the alkaline phosphates in the urine being always present. It is also a fact, and one well known to brain-workers, as well as to physicians, that laborious mental work, especially if coupled with worry and anxiety, is constantly accompanied with an increased excretion of the Phosphorus compounds.

This devitalization and unusual waste takes place at the expense of the element, and unless it be compensated, as sometimes it is, instinctively as it were, by an increased consumption of phosphorized food, the nervous centers temporarily lose power, and a state of lowered vitality (nervous exhaustion), so frequently experienced by hard-working professional and literary men, is induced. This condition is only relieved by a lengthened period of rest from mental labor, sleep, and nutritious food.

"Additional evidence," says Dr. Carpenter, "for the belief that the functional activity of the nervous tissue involves disintegration of its tissue by the agency of oxygen is found in the increase of alkaline phosphates in the urine when there has been any unusual demand upon the

nervous power.

"No others of the soft tissues contain any large amount of Phosphorus; and the marked increase in these deposits, which has been continually observed to accompany long-continued wear of mind (whether by intellectual exertion or by the excitement of the feelings), and which follows any temporary strain upon its powers,

may fairly be attributed to this cause.

"The most satisfactory proof is to be found in cases in which there is a periodical demand upon the mental power, as, for example, among clergymen, in the preparation for and discharge of their Sunday duties. This, when the demand for mental exertion is severe, and especially when there is that state of excitability of the nervous system which is frequently co-existent with a diminution of its vigor, is found to be very commonly followed by the appearance of a large quantity of the alkaline phosphates in the urine. And in cases in which constant and severe intellectual exertion has impaired the nutrition of the brain, and has consequently weakened the mental power, it is found that any premature attempt to renew the activity of its exercise causes the reappearance of the excessive phosphatic discharge, indicative of an undue waste of nervous matter."*

Take again the disease known as spermatorrhæa (by this term I include all those disorders which are primarily dependent on an abnormal loss of semen); it furnishes us with additional evidence that excessive waste of Phosphorus is inimical to physical and mental vigor. The spermatic fluid is rich in Phosphorus, and its emission from the system, in whatever manner produced, is, when excessive, highly injurious. The nervous centers being deprived of their proper pabulum, fall into a state of exhaustion, and the effects ultimately produced in the economy are the same as those that we see resulting from overwork and excessive mental strain. A morbid condition is set up in which a general loss of nerve-power is

^{*} Principles of Human Physiology.

manifested. Definite forms of functional disorders, such as cerebral and spinal paresis, neuralgia, epilepsy, melancholia, etc., are induced; and if these are neglected, structural changes are soon developed, leading to softening, paralysis and death. It is very remarkable that the phenomena of disease present in these cases of seminal waste should so closely resemble those induced by mental strain, although in the former they are usually more pronounced, more exhausting, and more serious. Premature failure of mental power, loss of memory, irritability, nervousness and extreme depression, are common to both. We conclude, therefore, that dephosphorized blood is incapable of supporting the nutrition of the cerebrospinal centers, and that functional disorders frequently result.

In relation to this subject, it may be mentioned that it is a well-known pathological fact that sexual excesses (in which nervous excitement and overwrought emotions are added to the material loss) are, for the same reason, productive of a general loss of mental and physical power, as well as of diseases affecting the organs of respiration and circulation.

"I am convinced," says Mr. Acton (whose opinion on this subject may be taken to be of some weight), "that many of the most obstinate as well as obscure diseases which the medical man meets with, arise from repeated loss; and I am no less certain that hypochondriasis, various forms of indigestion, debility, and nervous affections, arise from the same cause."

"Any warning against sexual dangers would be very incomplete if it did not extend to the excesses too often committed by married persons, in ignorance of their illeffects. Too frequent emissions of the life-giving fluid, and too frequent sexual excitement of the nervous system are in themselves most destructive."

The practice is certainly often continued until health is seriously impaired; and when the patient is at length compelled to seek advice, he is shocked to learn that his sufferings arise from excesses unwittingly committed.

Dr. Cotton says: "Of all vices, however, none are more apt to lead on to consumption than the unnatural or unrestrained indulgence of the sensual passions. To this cause alone the germs of tubercle are very frequently traceable; and I am convinced that the many bearings

of this subject upon physical and mental energies have a much closer and more frequent relationship to phthisical affections than we can ever expect, from their peculiar

nature, to see fully demonstrated."

"Menorrhagia, diarrhæa, leucorrhæa, and other hæmorrhages and fluxes, if excessive, reduce the powers of life and the capacity to resist disease. No loss of the kind, however, does so much harm, and is of so irreparable a nature, as that of the semen. In many of the lower tribes of animals the males live till they copulate and then die: the reproduction of the species is at the expense of the life of the individual. That our own species is not wholly exempt from this law is apparent from the fact that immoderate venery produces extreme debility and premature decay, and predisposes body and mind to various diseases."

In 1862 Dr. Smith read a paper before the Medico-Chirurgical Society, entitled "A Statistical Inquiry into the prevalence of numerous conditions affecting the constitution in one thousand phthisical persons when in health." It is here stated that "11.6 per cent. of the males had committed sexual excesses; 18.2 per cent. had been addicted to masturbation; and 22 per cent. had suf-

fered from involuntary emissions."

It is unnecessary to pursue the subject further. Enough has been said to show that, as a pathological fact, excessive elimination of Phosphorus is highly detrimental to the physical stamina and mental power of the adult; that it is also inimical to growth and development in the young, and a frequent cause of disease of the vital organs and nervous system.

The therapeutic uses of Phosphorus may be fairly gathered from what has already been stated; nevertheless, it will be well, by way of a resume, to state more definitely the several morbid conditions for which Phos-

phorus is known to possess remedial power.

The subjects, therefore, who benefit most from Phosphorus are those whose nervous power has been injuriously affected by: 1. Early indiscretions, vicious and irregular habits; 2. Intemperance; 3. Worry and overwork; 4. Failure in business or reverse of fortune; 5. Mental strain and prolonged anxiety; 6. Excessive grief, etc.

From the testimony of the authorities cited below, it

will be seen that Phosphorus has a very wide application in medicine. Its therapeutic effects are mainly due to its alimentary properties, and that when employed as medicine it is appropriated as food in building up and renovating nerve tissue. In administering Phosphorus we are not introducing into the blood a substance foreign to its constitution, but are simply supplying one of its normal constituents, which, owing to some morbific influence, has become deficient-it may be from excessive dis-assimilation of tissue, or an insufficient supply of the element in the animal and vegetable substances taken as food. Its physiological action in the economy then being that of renewing and strengthening brain and nerve tissue, it follows that it may be administered in every case of nervous disorder in which we have reason to believe that the process of dis-assimilation has been unusually destructive.

Many well-known authorities agree in these views:

Dr. Radcliffe says: "For the last seven years, also, I have used Phosphorus in the majority of cases of chorea in which I have used cod-liver oil, and for the same reason. I asked myself whether the fact that Phosphorus is present in large quantities in the great nerve-centers, and that the amount of this ingredient seems to have some direct relation to the activity of the nervous functions—being as much as two per cent. in adult life, and below one per cent. in infants and idiots—might not show that Phosphorus is specially indicated as food for a weak, nervous system, as much indicated, perhaps, as Iron in cases where there is a deficiency of red corpuscles in the blood; and this question once put seemed to require an answer in the affirmative."

"In proper doses," Dr. Radcliffe continues, "Phosphorus produces the very changes which are desired in cases of chorea, and analogous forms of convulsive disorder. Properly watched, it is quite innocent in its action, and may be most beneficial. Of this I am most confident."

"The chief use of Phosphorus in medicine," says Dr. Wood, "is as a nutrient tonic to the nervous system. In all cases of nervous exhaustion, whether involving the cerebral or spinal centers, it is of great value. I have seen marked benefit from its use when the symptoms were not severe enough to indicate organic lesion, but the most remarkable results have been in the cases in

which the structure of the centers was apparently deeply implicated. In threatening cerebral softening, in myelitic paraplegia from excessive venery, it is the only drug which appears really to affect the nerve-centers. In neuralgia, attention has recently been drawn by several writers to its virtues; and as neuralgia is often simply an expression of exhausted nerve-power, the use of Phosphorus is commended by reason as well as by experience. It is probable that it may be of some value in cases of impaired vitality, although the nervous system be not

obviously implicated."

Burgess and Mavor, in a work "On the Therapeutic value of Drugs, as deduced from Experiments on Man and Animals," say: "Phosphorus is indicated in the diarrhea of phthisis, pneumonia, in malignant jaundice, fatty heart, atheroma of the arteries, mollities ossium, softening of the brain and spinal cord, nephritis, in atonic conditions of the cerebro-spinal system and muscular weakness in children, irritable weakness of the sexual organs induced by excessive venery, incipient caries, purpura, functional paralysis, adynamic fevers with prostration and emaciation, hectic fever, progressive spinal paralysis, marasmus, general debility, chronic catarrh, arthritic hemicrania, broncho-pneumonia, phthisis pulmonalis in the early stage, gastro-enteritis with emaciation, ulceration, and fistulous ulcers."

Professor Percy (S. R.) has employed it with great ad-

vantage in cases of furuncular eruptions.

"In medicinal doses," Dr. Harley says, "Phosphorus is a stimulant to the nervous system, and may be given when there is a tendency to nervous prostration and general enfeeblement, as in the early stages of the palsy of the insane, and cases of cerebral or spinal atrophy."

"In small doses," says Dr. Pereira, "Phosphorus excites the nervous, vascular, and excretory organs. It creates an agreeable feeling of warmth in the epigastrium, increases the fullness and frequency of the pulse, augments the heat of the skin, heightens the mental activity and the muscular power, and operates as a powerful sudorific and diuretic."

phorus differ almost entirely as the dose is therapeutic or toxic. With this proposition we will not quarrel; but it may be more useful to know that, even when adminis-

tered in strictly therapeutic doses, its effects vary entirely according to the amount given. The action of Phosphorus is in fact threefold: 1. Nutritive; 2. Tonic; 3. Stimulative. Its nutritive and tonic action is best secured in doses of from a fiftieth to a twenty-fifth of a grain; while as a stimulus to the nervous centers the dose should not be less than a twenty-fifth, and not more than a twelfth.

On the Prevention of the Spread of Syphilis,

BY C. S. MUSCROFT, M. D., Surgeon to Cincinnati and St. Mary's Hospitals, Cincinnati...

Gentlemen of the Ohio State Medical Society:

On the twelfth day of March last, on delivering a valedictory address before the Academy of Medicine of Cincinnati, as the retiring president, the chief part of the essay was upon the importance of the prevention of syphilis, and so profoundly am I impressed with the importance of the subject, I wish also to call the attention of this so-

ciety to it.

That syphilis has existed from the earliest ages of society, where the promiscuous intercourse of the sexes has been common, is proved beyond a doubt, and that it will continue in like circumstances is quite certain, and I believe where this condition is present, venereal diseases are constantly being created, and both cases of syphilis and gonorrhea have come under my personal observation which I could not satisfactorily account for in any other

way.

The subject of the prevention of the spread of venereal diseases is now occupying the serious attention of many of the leading medical men and philanthropists of our times. Professor Gross, in his inaugural address to the American Medical Association, in the year 1874, selected syphilis in its relations to national health, and its deteriorating influence upon the human race. Noble efforts have also been made by several of our own States, which have endeavored to enact laws for the suppresison of venereal diseases.

Whilst it is true that in our country these efforts have not been crowned with the success their great importance deserve, it is not less imperatively our duty as medical men

still to make every exertion to that end.

It is not necessary for me to more than merely allude to the terrible mortality of syphilis, as every member of this society is fully acquainted with the facts relative to it. It undoubtedly in its different forms is attended with a greater death rate than all other diseases; it is true, for a time, epidemics may carry off many thousands in their visitations, but these occur but rarely, while we have syphilis constantly among us. I would like to say much more upon the statistics of the mortality from this malady, but the rules of this society will not admit of a volunteer paper occupying more than twenty-five minutes for its delivery.

In order to make any attempt for the suppression of this vice effective, I deem it necessary, first, to educate, as far as possible, the general public to understand to what extent venereal diseases exist, how alarmingly fatal they are to human life, and by what a horrible degree of suffering they are accompanied, that their effects upon the system are entailed upon the offspring, and, when once acquired, are seldom or never eradicated from the system.

Dr. Cressler says: "Hitherto, reticence has been the policy. This position has been held too long, for it is

false in principle and injurious in tendency."

"The day has arrived when the shroud must be removed; when the public safety imperiously demands an investigation into the matter; when those who regard it as a small wrong may see it in its real proportions, and when those who have looked upon it as unmanageable be like undeceived."

In discussing this theme it is impossible to avoid including that of prostitution. "Prostitution," says Dr. Cressler, "is at war with good government; it is an enemy to honest toil; compromises public heath; charges society with paupers and criminals; engenders idleness, crime, and horrible disease."

Can we, as philanthropists, make too great a struggle to combat these gigantic evils? or ought we, in a country like this, where there is so much general intelligence among the people, cease to labor where so much good can be accomplished?

I respectfully ask that the society may adopt some suitable plan for the purpose of carrying out the above recommendation, as I feel confident if the general public was

better informed as to the nature and fatal tendencies of venereal diseases, they will be more willing to assist in having such measures adopted by law, necessary for their

suppression.

In furtherance of the same object, I also ask that a committee be appointed to confer with the State Board of Health, to memorialize the State Legislature at its next session to have suitable laws enacted for the suppression of

venereal diseases throughout the State.

The difficulties and opposition to be met with in passing such laws would undoubtedly be very great, as the attempt would necessarily bring up the vexed question of the propriety of licensing houses of prostitution; true, this is a serious and delicate subject, and one that can only be decided by the greatest discrimination and sound judgment. But in countries where such laws are in force, the effect has been to greatly reduce the cases of syphilis, and to improve the general morals of those who are the chief sources of it.

I am particularly desirous that laws may also be enacted, giving the authorities of public hospitals greater control over the inmates, and more especially those affected by this class of diseases, and that all such cases, whether male or female, be detained in the hospital until all possible chance of local infection is perfectly subdued, and this condition be decided by the medical or surgical attendant.

It would also be better for the good order and discipline of all public hospitals, if the unruly patients could be placed under more restraint than the authorities can at present control, as they now frequently conduct themselves in such an improper manner, and with so much defiance, that they are compelled to be discharged from the institution in order to protect the other patients, while they themselves are seriously injured as the result of their own bad conduct. But this is a digression of the main intent of this paper.

Two of our sister States have had the benefit of laws for the suppression of venereal diseases, and while the laws were in force their effects were decidedly beneficial,

and the disease on the decline.

In the year 1874, Dr. A. L. Cressler, a member of the legislature of the State of Pennsylvania, introduced a bill in the House of the Representatives entitled, "An Inquiry into the Extent of the Social Evil, and the Proposed Reme-

dy." The speech he made on the occasion was rich in the religious and profane history of the existence of venereal disease from the earliest time of society to the present. It was an eloquent, classical and masterly effort, replete with the fullest information. I will give the headings of the different sections of the laws recommended by him; fourteen of which were similar to those in force in St. Louis and New Orleans:

Section 1 provides that a full and complete record of all houses of ill-same and prostitution shall be made and fur-

nished to the board of health.

Section 2 provides for a board of police commissioners. Section 3 provides for the supression of houses of illfame, upon the request of the board of health.

Section 4 provides that every woman occupying a pri-

vate room, will be regarded as a brothel keeper.

Section 5 fixes the salary of the examiner. Section 6 defines her conduct on the street.

Section 7 provides that no prostitute shall rent a house without the consent of the Board of Police Commissioners.

Section 8 provides that an industrial hospital shall be

provided for.

Section 9 provides for the support and maintenance of said industrial hospital.

Section 10 provides for the management of said hos-

pital.

Sections 11 and 12 provide for the regulation of the medical examiners, and defines their powers.

Section 13 has reference to the duties of brothel keepers in regard to prostitutes.

Section 14 relates to the duties of prostitutes and so on.

Section 15 provides for the time the owner or keeper of houses of ill-fame shall allow a prostitute to remain in their house or room, without reporting such inmate to the Chief of Police.

Section 16 relates to the duties of the medical examiner, and the manner in which he shall make his reports.

Section 17 provides for the notice to be given by each medical examiner in his district to the keeper, or owner, or person in charge of every house of ill-fame, in order to collect the dues provided for.

Section 18 refers to removal of lewd women from one

place to another, without a permit obtained from the Chief of Police.

Section 19 requires each owner or keeper, or any person connected with houses of prostitution, to give full information as required in Section 1, and also any change that may take place in its ownership, and the amount of fine imposed for non-compliance.

Section 20 speaks the penalty imposed for harboring

unregistered females.

Section 21 alludes to the authority of the Board of Health to employ all inmates committed to the industrial hospital.

Section 22 provides that no name of any prostitute or lewd woman shall be erased from the records without con-

sent of the proper authorities.

While this code of laws was in force in the city of St. Louis, the report of the Police Commissioners illustrates to what a great extent syphilitic disease was abated among the prostitutes who were made amenable to it.

Before closing this paper, I present a few quotations from Dr. Cressler's report on the subject, as they give fuller and more perfect information than any I am in possession

of.

He says, "I will now quote further from the report, and recapitulate a few of the moral effects of the law, which, in my opinion, far outweigh any moral objections which may be urged against it."

"1st. By this report it is shown conclusively that the number of public women have uniformly decreased each

year.

"2d. That they are more decorous in their manner in public.

"3d. That the plying of their wicked trade upon the

public streets has been almost discontinued.

"4th. That a considerable number of abandoned women have been reclaimed and restored to respectable life, and in several cases married."

"5th. That private prostitution, which often develops into open vice, has been materially checked through fear of the legal consequences when brought home to the offender.

"6th. That juvenile prostitution has been almost wholly removed.

"7th. Disease and death, from syphilitic diseases, diminished two-thirds.

"I now ask, Mr. Speaker, what of such results? Are they

not encouraging beyond measure?"

The report further says: "The most enthusiastic friends of the measure could not have hoped for a larger or more beneficent success than has attended its workings during the two years in which it has been enforced. The young and the heedless have been warned by the police of the consequences of entering a life of shame. The number of prostitutes has largely decreased, and the deaths, formerly so numerous in consequence of a disease concomitant on a life of shame, have in a great measure been prevented.

"We also see a marked decrease in crime, which is an-

other vital consideration."

Statistics relating to the suppression of syphilis in European countries, show more gratifying results than those mentioned above. If other cities of our own country had laws like those of St. Louis, "can any man fail to see the

result?"

Many other facts could be brought forward, illustrating the great importance of the suppression of venereal diseases, and the benefit which would accrue in saving human life and health, and improving morals. I do not know of any subject that is of so much importance to civilized society as this, nor do I know of any class of men who can exert so great an influence for good in carrying out the suggestions of this paper as physicians; their knowledge of disease, their great intelligence, their knowledge of human nature, their philanthropy, and experience in life, all particularly fits them for such a duty, and I beseech all to use your influence to carry out the suggestions of this paper.

But a short time after reading the above, I found the

following in the Cincinnati Daily Enquirer:

"THE SOCIAL EVIL—A ST. LOUIS GRAND JURY DEMANDS ITS REGU-LATION BY LAW.

"St. Louis, June 27.—The report of the Grand Jury refers to the repeal of the social evil law, which was in force here previous to a couple of years ago, and says the crimes incident to the social evil have greatly increased since the repeal of the law. It says that, under existing laws, the police authorities are almost powerless to suppress the

crimes which inevitably flow from the brothels of the city, and the jury declares that the best interests of society demand the re-enactment of the social evillaw, with a view to check this vice as much as possible. It is understood the jury found indictments against a large number of persons who rent houses to dissolute women, but as capiases have not been issued yet, the names of the indicted parties have not been made public."

SELECTIONS.

The Hypodermic Injection of Dialyzed Iron in Chlorosis.

A. L., aged twenty-one years, single, has a history of hereditary lung trouble. Thus far the girl herself has given no evidence of any pulmonary disease. She has never had malarial fever nor rheumatism. Last spring she began to feel badly. She lost strength and health, and suffered from frequent attacks of palpitation and dyspnæa. On Christmas last the symptoms became worse; her legs and feet began to swell, and she passed more water than normal. At present her appetite is fair, her bowels are regular, and she sleeps moderately well. There has been a total arrest of the menses for the past three months. Her digestion is only fair. There has been no loss of flesh.

This is a typical case of chlorosis. There are several questions, however, which must first be settled before I proceed to tell you of my new plan of treatment. Is (1) the marked anæmia present in this case connected with any organic cause? And (2) is the swelling of the lower extremities due to cardiac disease or to disease of the blood? The girl's temperature is about normal, with a range of from 98° in the morning to 99° in the evening. You notice how pale her tongue and gums are. The conjunctiva is pearly, and the ears are pale. Examining the heart, I find that it beats very rapidly. This is probably largely due to the excitement of being before the class. Even in the wards, however, it beats rapidly. The heartsounds are sharply defined. There is no sign of valvular disease. On the right and left side of the base of the heart I hear a soft systolic murmur. There is no

enlargement of the heart. The murmur which I hear is undoubtedly a blood-murmur. This murmur is faintly transmitted into the carotids. I can distinguish a very marked "venous hum" in the jugulars I have never heard this hum so plainly before. The "venous hum" is a sign of extreme anæmia. I find no cause whatsoever of circulatory disturbance. I see only the signs of a change in the condition of the blood. There is no disease of the liver, lungs, spleen or uterus; no organic trouble anywhere. We call cases of this kind by the name of chlorosis. We are unable to find out why the blood is changed. This girl's blood has been examined microscopically, There is no change in the relative proportion of white to red blood corpuscles. There is, however, a slight deficiency in red corpuscles. This could not be properly called a case of leucocythæmia. It is undoubtedly chlorosis-menstrual disorder, connected with deficiency of the red blood-corpuscles. The palpitation, dyspnæa, and swelling of the feet are symptoms of the deficiency in the red element of the blood, and not the results of any organic disease.

The girl has improved vastly under treatment. She is getting plenty of rest and good food, but she had them both in abundance before she came to us. Her rapid improvement is altogether due, I think, to a new remedy which I am employing in a very novel manner. I refer to the rapid introduction of iron into the girl's system by means of the hypodermic needle. Why has not this been practicable before the present day? Because it has been well-nigh impossible to obtain a non-irritative form of iron for hypodermic use. The tartrate of iron, although one of the mildest forms, is entirely too liable to cause irritation and abscesses. Lately a new preparation of iron, the dialyzed iron, appeared in the market, which, it is claimed, is neutral and non-irritating. It struck me at once that this was just the thing to be used in my proposed hypodermic injection. I have been using this dialyzed iron hypodermically in this case for the past few days, and it has come fully up to its reputation. There have been none of the usual after-effects of iron, such as costiveness and disordered digestion. All these are done away with. I have been giving daily hypodermic injections of fifteen minims of pure dialyzed iron. was diluted at first, but, experiencing no unpleasant

after-effects, the assistant has, for the past day or so, been using the dialyzed iron undiluted. For the last four days the girl has had a daily injection of fifteen minims. The scars marking the spots where the needle has been introduced show no sign whatsoever of inflammatory action. To-day the patient shall have an injection of twenty, to-morrow of twenty-five, and on the next day of thirty minims of the pure, undiluted iron. I think we are going to gain in therapeutics by this case. I certainly expect to find a very rapid change for the better in the girl's condition in the course of the next five or six days. I will bring her before you again, and report progress on Saturday next. Between now and then I will see that her blood is carefully examined under the microscope by an

expert.

The girl was again brought before the class two weeks afterward (February 23). She showed the most wonderful improvement. Dr. Da Costa said: "You will remember that when I last brought this case before you the blood-murmurs were distinct, and that there had been no menstrual flow for the space of three months. The daily injection of thirty drops of the dialyzed iron under the skin of the girl's arm has not caused the least irritation. Her digestion is admirable, and, what is most wonderful of all, she has menstruated during the past week. Her strength is so much better that she wants to go right home. You see how the color is coming back to her lips, gums and tongue. Another evidence of her very marked improvement is the fact that the 'venous hum,' which was so loud and marked two weeks ago, is comparatively distant and faint this morning. I am convinced of the most posi ive and marked improvement in the case. temperature is normal and steady. She feels well, her appetite is good, her bowels regular, and her headache all gone.

"Now that we have reached a point of such marked improvement, the question arises as to whether we shall continue this treatment by hypodermic injection, or give it up and place the patient on iron by the mouth. I think we may discontinue the hypodermic medication. In place of it, I will order twenty drops of the tincture of the chloride of iron, in water, thrice daily. You will understand that I do this because I consider the case as

practically cured.

"Do I think that we should have had such a rapid cure, and one so unattended with constipation and indigestion, if we had given the iron internally? I think not. You see, therefore, how excellent a method that by hypodermic injection is when the stomach will not retain the iron. Where the stomach will retain slight quantities of iron, we might give a little of the drug by the mouth, and

the bulk of it hypodermically.

"Knowing how the iron thus introduced has acted here, we might with advantage employ this treatment in cases of pernicious anæmia. I say we ought to retry the use of iron in pernicious anæmia—try its use hypodermically. The only reason, perhaps, that it has thus far failed to do good in that disease has been because of the great digestive disturbances attending its use."—Medical Times.

Spontaneous Generation.

PAPERS on Spontaneous Generation appeared in the Nineteenth Century-one by Dr. Tyndall in January; another by Dr. Bastian, in reply, in February. well worthy of perusal. After a historical resume of his subject. Dr. Tyndall describes his method of filling flasks with organic infusions, of preventing contamination, and of heating such flasks to 212° Fahr, and hermetically sealing them so that their boiled contents are beyond all question free from infection by germs. Sixty flasks thus treated were transmitted to the Alps-7,000 feet above the sea level-and on their arrival but six were muddy, and it was found that the fragile ends of these flasks had been broken in transitu. The "muddy" changes were due to a vast development of bacteria which swarmed in the infusions. The remaining fifty-four pellucid solutions were exposed to sun or artificial heat, and at the end of a month fifty (four being accidentally destroyed) were found still pure. Twenty-three were then opened in a hav-loft, and twenty-seven in mountain air, and both sets were heated over a stove (50° to 90° F.) In three days, twenty-one of the former (the contaminated set) had putrefied, while not one of the other had changed. It is clear to Dr. Tyndall that all antecedent experience proves that he is right in concluding that particles of

dust-laden air are the germs of the life of the changed infusions. There is no warrant, he adds, offered by nature for the assumption that this life proceeds from dead particles, and though it is true (as Dr. Bastian has stated) that Liebig said "dead decaying matter can produce fermentation," yet, adds Dr. Tyndall, this chemist did not regard fermentation as synonymous with life, and his views of molecular instability involved no such theory as that life sprouted from the planting of dead particles. Dr. Tyndall refers to his experiments with infusions in moteless chambers, wherein, at any heat varied according to the "caprice" of his opponent, no change will occur, though with the opening of the chambers putrefaction at once begins. He also dwells on an interesting series of experiments with ordinary infusions, and with mineral solutions containing the elements of bacteria; but as he questions the very part in these experiments on which he founds his argument, we will not dwell on them here. The disputed death-point of bacteria is the stronghold, he says, of the heterogenist, who, he states, in face of such examples as that given by the plant medicago, which will survive four hours' boiling, makes special kinds of living matter do duty for all kinds. Dr. Tyndall's belief is that soft bacteria are destroyed by less than a minute's boiling, but he deems the extension of this fact to the desiccated germinal matter of the air as without justification. Dr. Bastian urges that the question is not whether germs can initiate putrefaction, for all admit that, but whether mere debris from the air, either as particles or large fragments, can cause similar changes, and repeats that Liebig gave to decaying organic matter like functions with those which Pasteur would limit to living organisms. Gerhardt and others, he points out, have also maintained that mere organic matter can set up fermentation with a birth of living particles, and whether this be true or not is the actual question to be solved. Dr. Bastian thinks Dr. Tyndall has "but renewed the proofs of things which were not before doubted;" and can find no evidence of the existence of those "ultra-microscopical particles" which, we are assured, can by subsidence contaminate infusions, and especially questions their existence because Dr. Tyndall states that they behave to heat altogether unlike all known visible germs. The late Professor Wyman believed that the disputed questions can only be

settled by proving how far living things resist water at high temperatures, and both sides seem to favor this view. Dr. Bastian compares generation de novo with crystallisation; and quotes Spencer, Lewes, Huxley, Darwin, and even Virchow, as men who hold that at one time living matter came into being independently; while some-Trecul, Fremy, Cantoni, and others-believe that a like process is still going on. As regards the death-point of bacteria, Cohn and Horvath have, says Dr. Bastian, confirmed his experiments, which fixed it at 140° Fahr. This, to a certain extent, Dr. Tyndall admits, but thinks the germ will live in a higher temperature than the parent; and Dr. Bastian, referring to Dr. Tyndall's charge that he has made "special kinds of living matter do duty for all," points out that in his book, "Beginnings of Life," he had particularly recorded the death-rate of different infusions, and remarked on the resisting power of some seeds. does not deem his case proved, but argues that all facts tend in its favor, and flatly describes his opponent's arguments as those of simple assertion. Dr. Tyndall has assumed that bacteria must spring from seeds, and uses this "must" to interpret all his experiments. Finally, more moderate opponents of heterogenesis-for example, Mr. Lister and Dr. Purdon-Sanderson—think it highly improbable that bacteria have any germs at all, and, whether they have or not, have certainly never met with any which could resist half an hour's immersion at 210° F. Dr. Bastian concludes with the opinion that those who would show that spontaneous generation does not occur at the present day can only do so by proving that ferment-organisms are able to withstand a brief exposure to 212° F. in fluids.

We are sorry we can not leave the matter with the last sentence. In this month's issue of the Nineteenth Century, Dr. Tyndall has a "last word on spontaneous generation," and it is a source of regret to us that we feel obliged to condemn its general tone, and to say that it is written in a spirit which we trust will be rarely met with in scientific discussion. It is lamentable that so much personal feeling should invariably creep into the consideration of this most vital question, and that it should be treated as if individuals alone, and not the whole scientific world, were concerned in it. Heterogenists may have erred in this direction, but in no single instance so

far as has Dr. Tyndall in his last diatribe. On the first page of his "last word" he contemptuously terms his "respondent" (Dr. Bastian) a "neophite," who has not treated a "master" with proper consideration. But this is a point for others to decide, and not the "master" himself. If Dr. Bastian be a neophyte, he is one who for eight years has legitimately combated Dr. Tyndall's views, and surely Dr. Tyndall himself will be ready to admit that this "respondent" has year by year forced him to elaborate his experiments and to guard against possible errors. Heterogenists have made mistakes in this most difficult inquiry, so also have their opponents; and to have made mistakes is no disgrace to one or the other. We have no belief in the infallibility which some scientific men assume for themselves. But it is a different matter to charge a man with "leaving his medical brethren in the dark," and with willfully refusing to retract errors. This touches not only scientific probity, but common honesty, and we condemn such utterances in the strongest way. The questions at stake are serious ones, and, in spite of Dr. Tyndall's "last word," are by no means at rest. A "last word" which, notwithstanding many excellent points, is from beginning to end a sarcasm on a a particular individual, who has devoted great ability and much labor to the subject, will, we are sure, not be countenanced by scientific men, no matter what may be their opinions on the main question.—Lancet.

Seamen's Hospital, Greenwich.

ANEURISM OF THE ULNAR ARTERY; LIGATURE OF THE BRACHIAL ARTERY; RECOVERY.

(Under the care of Mr. N. Davies-Colley.)

SPONTANEOUS aneurisms of the arteries of the forearm are very rare, and those which have been recorded seem to have been always associated with heart disease. The following case was no exception to this rule, and resulted, in Mr. Davies-Colley's opinion, from the impaction of an embolus. It is advised by some surgeons to treat such cases by laying open freely the sac, because it is thought that the free anastomosis of the arteries in this region would render Hunter's operation useless. In this

case such a procedure would have been a very severe and dangerous one. Mr. Davies-Colley observes that he would always be disposed, where the sac is deeply seated, to try first the ligature of the main artery at some distance above the swelling. A great part of this report was prepared by Mr. Frederick Shann, the brouse-surgeon, to whom we are indebted.

John F—, aged twenty-five, was admitted on Oct. 13th, 1877. For the last year he had been at sea as a shipsteward; previously he was for seven years in a telegraph manufactory. He had suffered as long as he could remember from disease of the heart. His mother told him that his heart always beat rapidly, and he had always been short-winded. During the last four years he had been much troubled at times with palpitation. Last July he had pain and swelling in the upper part of the right forearm. Hot fomentations and poultices were applied, and in fourteen days the symptoms subsided. Ten days before admission, without injury or any other apparent cause, he began to have similar pain in the upper part of the left forearm; two days later swelling commenced, and gradually increased up to the time of admission.

On admission the patient was rather undersized, thin, and of an anxious expression. The heart was greatly hypertrophied, and the pulse was of a decidedly "waterhammer" character. A murmur could be heard all over the chest, and even as low as the lumbar region. There was a systolic and diastolic aortic, as well as a systolic mitral, bruit. A prominent pulsating swelling occupied the upper third of the left forearm, especially on its radial side. A bruit was distinctly audible over it. A mixture containing tincture of perchloride of iron and digitalis was ordered.

On the 15th Mr. Davies-Colley saw him for the first time. The forearm was much swollen at its upper third, red and cedematous, so that the first impression was that of a phlegmonous inflammation. This opinion was somewhat favored by the absence of a definite boundary to the tumor. Closer examination, however, soon showed that the whole swelling expanded with each pulsation. This expansion could be felt from immediately below the bifurcation of the brachial artery to four or five inches lower down. It was at first thought that the aneurism was upon the radial artery, because the swelling became larger as it approached the radial border of the forearm.

Subsequently, however, it was found that there was no pulsation in the ulnar artery at the wrist, whilst that of the radial artery in the same situation was quite normal. The fluid was moreover covered by a thicker layer of muscles than was consistent with the comparatively superficial position of the radial artery. The greatest girth of the left forearm was $10\frac{3}{4}$ inches, while that of the right

was only 9 inches.

An attempt to control the pulsation by flexion was so painful that it could not be borne. The forearm was then elevated, and pressure applied by tourniquets to the brachial artery. This method of treatment having been found painful, and often inefficient, on the 19th digital pressure was employed for twelve hours, and he had digital pressure for three days consecutively for twelve hours a day. On the 22d pulsation was somewhat less forcible, and the swelling was harder. The circumference of forearm was 11\frac{2}{3} inches. The man complained of considerable pain in it at night.

With the exception of one day, digital compression was applied for twelve hours daily until the 27th. The stoppage of the brachial artery was not always complete, as it was difficult to prevent the vessel from occasionally

slipping beneath the fingers.

On the 27th the swelling was not diminished in size, the forearm being still $11\frac{2}{3}$ inches in circumference. As the man began to find the treatment painful, and as there appeared to be danger of the swelling becoming diffused, ligature of the brachial artery was advised. The man objected to the use of an anæsthetic, on account of his diseased heart, and Mr. Davies-Colley therefore operated upon him without chloroform, and placed a strong catgut ligature on the brachial artery half way down the arm. Carbolic spray was used, two silver sutures inserted, and a dressing of carbolic gauze applied. He seemed to suffer but little during the operation, and said that by far the most painful part of it was the incision through the integuments.

On the 29th the wound was dressed for the first time. The circumference of forearm was eleven inches. Pulsation could be felt as low as inner condyle, but none in aneurism.

On Nov. 5th the third dressing was performed. There

was no discharge, and the sutures were removed. The

circumference of forearm was 101 inches.

On the 12th the wound, which had appeared to be united by primary union, had opened, and was now about one inch long by a third of an inch broad, and covered by healthy granulations. The circumference of forearm was ten inches.

On the 19th pulsation was noticed in radial. After the 29th the wound was dressed every three days. The cir-

cumference of forearm was nine inches.

It was not until December 21st that the granulating surface was completely healed over. No part of the catgut ligature came away in the discharge. During the greater part of the time the patient was in the hospital he suffered from throbbing headaches, and his evening temperature was usually observed to be two or three degrees above that in the morning. When he went out the aneurism had shrunk up to a small, firm knot deeply seated among the muscles, and the circumference of the forearm had been reduced to eight inches and three-quarters. All pain had left the limb, and the movements were as free, though not yet as strong, as they had ever been.—

Lancet, March 9, 1878.

The Rationale of the Menstrual Flow.

BY G. ALDRIDGE GEORGE, L. R. C. P., LOND., M. R. C. S.,

LATE SHARPEY SCHOLAR AT UNIVERSITY COLLEGE, LONDON.

THE occurrence of the menstrual flow, although a phenomenon that has excited much interest and been the subject of numerous speculations, is still, I believe, without an accepted explanation. That being so, I am induced to suggest an explanation that appears to me to have enough of probability about it to justify me in submitting it to the judgment of the profession.

In the human economy, during infancy, childhood, and youth, the power of elaborating and assimilating nutritive material is very great; and this is so because the body has not merely to be sustained, but to be supplied with

materials necessitated by its growth in size.

The female infant at birth usually weighs less than the male. The woman (as far as capacity for procreation is

concerned) is complete at an earlier age than the man. The growth of the girl during the seven years before puberty is usually more rapid than that of the boy. From these facts it appears that nature endowed the female with more rapid powers of growth than the male, that her blood-making apparatus is relatively more productive, or that the demands of her system other than for growth are relatively less than in man. Why is this? Is it not probable that this is in view of the great demands on the nutritive and assimilating organs that will be made during the periods of pregnancy and lactation? When the girl arrives at commencing puberty, the rate of growth is usually much lessened, and at first the lessened demands of the system generally are supplemented by demands for the special organs concerned in reproduction and lactation; but on the completion of these organs, the powers of the blood-making apparatus continuing the same whilst the demands on the blood are lessened, there obtains a state of increased tension in the blood-vessels which gradually becomes greater. This increase of tension is followed by certain results-viz: the headache, sense of fullness and heat in the loins and back, weight and tension of the breasts, that are connected with the appearance of the flux. Probably it is one of the principal causes of the congestion of the uterine vessels, the rupture of the Graafian vesicle, and of the turgidity of the Fallopian tubes.

Dr. Fothergill says, speaking of hæmoptysis: "Under one set of circumstances hæmoptysis occurs as a sort of leakage. In these persons there is a tendency to make blood rapidly, and then the weakest spot in the vascular system gives way." Now, in these young women who are making blood rapidly, the lining mucous membrane of the uterus, considering its functions and its recent increased development, may be supposed to be the weakest spot of the vascular system. When the blood-tension reaches a certain limit the delicate capillaries rupture, the tension and local congestion are relieved, a few ounces of blood are lost, the proper equilibrium is restored, which restoration is synchronous with the disappearance of the un-

pleasant symptoms before mentioned.

When conception has taken place there is an outlet for the surplus of nutritive income over expenditure in the growth of the fœtus and uterus, and a similar outlet also exists during lactation, so the occurrence of menses dur-

ing lactation is a comparatively rare event.

When a woman is in an unhealthy condition, such as commencing phthisis, often the first thing complained of is the non-appearance of the accustomed flow. Here the cessation must be considered as indicating a failure of the powers of nutrition, with deficient blood-making leading to insufficient blood-tension. Nature can not now afford to be prodigal of her strength. She needs all her resources for the conservation of the individual.

Again, at the menopause, normally the flux appears at first in less quantities or at longer intervals. The blood-tension is lessened by the commencing failure of the apparatus of nutrition, so that the excess of income over expenditure is decreased. But there is still a surplus, and its existence is indicated by the fact that the majority of women become stouter after the climacteric period is passed.

DORCHESTER.

Treatment of Pleuritic Effusion.

This has lately been the subject of much discussion, and the prominent names ranged on either side of the question show that the profession is by no means agreed on the proper method to be pursued. Dr. T. Clifford Allbutt divides the effusive pleurisies into:-1. Acute effusive. 2. Quiet effusive. 3. Empyemata. 4. Pleuritic dropsy. In the first class of cases the effusion has a tendency to become absorbed, and Dr. Allbutt deprecates operative interference. But if the effusion is so great as to cause great dyspnœa, or to interfere with the entrance of blood into the right heart, then tapping is indicated. Quiet effusive pleurisies are always dangerous; if the pleura is full, there is danger of sudden syncope, from the direct effect of pressure on the heart; if it is but partially full, there is danger of sudden increase, producing a similar effect. These effusions are difficult of absorption. Medicine has but little effect on them, the best treatment being repeated blistering, stopping just short of vesication. If, however, the pleura be filled with fluid, the risk of injury to the lung, of empyema, and even of sudden death, is so great as to warrant the resort to tapping, which, in

Dr. Allbutt's hands, has been followed by very tavorable results. In empyema, operation of some sort is inevitable, and the doctor strongly recommends free drainage as the only method not followed by fever, adding that in private practice he had never lost a reasonably favorable case. Pleural dropsies seldom need puncture. Dr. George Johnson, in a clinical lecture, presented a patient to show the good effects of aspiration in copious effusion of long The case was of traumatic origin, of seven standing. weeks' duration, and the fluid consisted of serum, with a large admixture of blood. Seventy-seven ounces were withdrawn, giving immediate relief, and the patient was going rapidly on to complete recovery. After a careful analysis of three hundred and fifty-two cases, Dr. Goodhart, of Guy's Hospital, says: "I do not think there is any sufficient evidence in favor of the necessity or utility of paracentesis as a remedial agent in any large number of cases of simple pleuritic effusion," and he does not yet feel disposed to agree with Dr. Anstie in his doctrine that paracentesis "must become an every-day remedy for cases where an effusion, purulent or not, lingers for more than a very limited period." The results in empyema are not encouraging. Spontaneous recovery is possible. In twenty-six cases not operated upon, there were fifteen recoveries and eleven deaths; in fifty-one cases operated on, there were twenty-eight recoveries and twenty-three deaths. Dr. Wilson Fox has tabulated nearly 15.000 cases from hospital reports, and estimates the mean total mortality at from ten to seventeen per cent. "If we turn from these data," he continues, "to the mortality of pleurisy after paracentesis, no one can help being struck with the high mortality which has attended the cases operated upon, reaching, as a mean of recent observation to twenty-seven per cent., and only falling to or below ten per cent, in the hands of observers the large proportion of whose operations have been confined to serous effusions in the early stage; while in others it has ranged as high as forty-five to fifty-two per cent." He adds, however, that this high mortality is due in many instances to the nature and to the severity of the cases and of their complications. Dr. Lee recommends the maintenance of a vacuum in the pleural cavity after paracentesis; this he accomplishes by means of a cup placed over the opening; from this the air is exhausted by means of a modified

Davidson's syringe.—British Medical Journal, Nov. 24, Dec. 8, and 15; Lancet, Dec. 8. Dr. Baum, of Dantzig. reports two cases of empyema in which he operated early by incision. Perfect recovery followed in both cases. The operations were performed antiseptically, and, at first, the cavities were washed out with a solution of salicylic acid, but this practice was early discontinued, because it was invariably followed by rise of temperature. He advises, in such cases, early operation and use of drainage. tube. The latter he secures in a peculiar manner. It is stitched to the skin in such a manner as to project about an inch; wads of carbolized cotton are then packed between the tube and threads; these wads are renewed at every dressing. He approves of exsection of a portion of a rib in cases where the lung has lost its electricity.—Berliner Klinische Wochenschrift.

New York Academy of Medicine. Stated Meeting, March 7, 1878.

DR. S. S. PURPLE, PRESIDENT, IN THE CHAIR.

CLINICAL OBSERVATIONS ON THE EARLY STAGES OF SCARLATINA, WITH SUGGESTIONS AS TO PATHOLOGY.

Dr. C. E. Billington read a paper upon the above subject (vid. pp. 221 et 243). It being before the Academy for discussion.

Dr. Fordyce Barker remarked that he fully accepted the clinical facts set forth in the paper, but was inclined to raise a question regarding the deductions which had been made from those facts. He was quite sure the writer of the paper did not expect that the conclusions which he had reached would be accepted without the most careful investigation. He was not prepared, however, to say that those conclusions were erroneous, but believed that the writer would be best complimented by examining the method of reasoning by which his conclusions had been reached.

First, with regard to incubation. It had often seemed to Dr. Barker that the term incubation, as ordinarily employed, had two significations: the one being the length of time which a poison could be retained anywhere and still retain its vitality; and the other being the length of

time during which the poison might be deposited in the system, and remain latent before the first characteristic phenomenon of the disease manifested itself. In our loose way of speaking and writing, the term incubation was used to cover both of these points. He believed there was abundant evidence to prove that the poison of scarlet fever could be preserved in houses, in clothing, etc., for weeks, months, and for more than a year, and finally develop its full effects in a human system which was in a favorable condition.

The history of a case was then related, in which a woman in the puerperal condition was attacked with scarlet fever, and there had been no exposure to the poison, save that which came from wearing a wrapper that had been packed in a trunk for several months, and which, just previous to its packing, had been worn while taking care of a child sick with the same disease. This was one of many cases that could be related, illustrating the long period of time which the poison could be retained in clothing, and remain capable of producing its full effects.

Next, as to the length of time the poison remained in the system before it acted upon the individual. There were some cases which seemed to demonstrate that the poison could manifest itself in twenty-four hours after exposure. In other cases the poison seemed to be inactive for a much longer period of time. The length of time that elapsed seemed to depend upon the peculiar condition present in the system into which it was received and de-

veloped.

There probably was no question regarding the statement concerning the specific nature of scarlet fever, but it had seemed to be the aim of the author of the paper to demonstrate that the primary effect of the p ison was produced on the mucous surfaces of the throat; that the same influence often extended to other persons not sufficiently susceptible to allow of its development, hence they escaped the disease. Dr. Barker was not prepared to say that such was not the case, but, to his mind, there were to the theory several important objections, which must be answered satisfactorily before it could be accepted. In the first place, the author assumed that there was no evidence that the poison of scarlet fever produced blood-changes as a primary effect. Was that true? Were not all the phenomena of the disease due essentially to blood-

changes? No, said the author; and claimed that many phenomena of the disease, such as nasusea, vomiting, cerebral disturbance, etc., were secondary to the throat symptoms. Dr. Barker found great difficulty in fully accepting that theory. There was a class of cases, of which he had seen a few illustrations, where the system was so rapidly overwhelmed with the poison that life was destroyed within a few hours, and before the development of but few of the characteristic phenomena of the disease. Several illustrative cases were reported. The question was asked: "What was it that destroyed life in those cases?" The answer which Dr. Barker had given was, that death resulted in consequence of paralysis of the vaso-motor system of nerves produced by the overwhelming effect of the scarlet-fever poison.

Another suggestion made by Dr. Barker related to the influence which diphtheria might have had upon the series of observations made by Dr. Billington. In the year 1858 a fatal epidemic of diphtheria prevailed in the city of New York, and since that time the disease had had a continuous existence among us. Might not the epidemic influence of diphtheria, existing as a complication, account partly for the appearance of the throat in Dr. Billington's

series of cases?

Dr. Garrish referred to several cases which seemed to show that the poison of scarlet fever could remain in rooms for a long period of time and yet retain its activity, and also that the disease could be conveyed in clothing.

Dr. Post believed that, in the class of cases in which the onset of the disease was severe, there was no relation between the severity of the symptoms and the accompanying sore-throat; in the protracted cases, however, there was usually an agreement between the general and the anginal symptoms. He also believed it to be necessary for the medical man to exercise certain precautions in order to avoid conveying the disease from one family to another. Careful ablution and airing should be secured after visiting patients sick with searlet fever before visits were made in families exempt from the disease. It was also regarded as important to disinfect the hair of nurses, and those in constant attendance upon patients sick with scarlet fever, for, if that precaution was not taken, it might be the medium through which the disease was conveyed, as had been shown by cases.

Dr. J. C. Peters believed in the local origin of the disease; that the system was affected through the throat and the blood even more rapidly than Dr. Billington was willing to admit. The history of a case was related, in which the throat symptoms were distinct, although exceedingly slight, and yet the patient died within twenty-four hours. Dr. Peters believed in the local origin of constitutional diseases.

Dr. Andrew H. Smith remarked that there were quite a list of constitutional diseases with which sore-throat was more or less frequently associated. Beside the one under discussion, there were typhoid and typhus fevers, measles, small-pox, diphtheria, and syphilis, and perhaps some oth-Most of those diseases were communicated through atmospheric agency, or in some unknown way; but smallpox and syphilis might be introduced into the system at a known point distant from the throat, and yet throat symptoms result. Small-pox, the result of direct inoculation upon the surface of the body, was as likely to cause angina as if communicated through the atmosphere. Syphilis, introduced into the system at any point, produced throat lesions. Those facts, together with the widely different diseases with which sore-throat was found associated, pointed to some peculiarity of the location which predisposed it to be the seat in which constitutional poisons worked out their local action; and this peculiarity probably consisted in the extreme glandular activity of

Dr. S. also suggested that the effect of glandular action might be seen in the cutaneous eruption in scarlatina. The eruption was punctate, and probably each minute point would be found to correspond with the orifice of a perspiratory duct, the integument being irritated by a poisonous element which was being eliminated with the

perspiration.

Dr. Hanks related some rapidly fatal malignant cases—one lasting only twelve hours—which had occurred in his early practice, and had upset a theory which he had pre viously held that all cases of the disease were curable. He considered Dr. Billington's statistics, showing that fifty per cent. of children exposed to the contagion of the disease might escape it, as interesting and important. He thought there were physiological reasons why the erup-

tion should appear in the throat sooner than on the cutaneous surface.

Dr. Billington said, in concluding the discussion, that the fact referred to by Dr. Smith, of the appearance of throat congestions in connection with many constitution. al diseases, had not been unthought of by himself. If it could be shown that angina was constantly the earliest secondary symptom in diseases which could not be supposed to originate in the throat—as, for instance, syphilis -it would militate strongly against the hypothesis of the reception of scarlatinal poison at that point. But he had not observed, nor been able to learn from others, that such was the fact; and he inquired if any of those present could say that it was. The point, however, was not essential to the rest of his argument; the chief object of which was to show that certain local morbid processes, however produced, might be the real causes of the constitutional disturbances in the disease.

With regard to the apparent difficulty, which had been spoken of by several in the discussion, of accounting for the phenomena of malignant cases on any other hypothesis than the generally accepted one of an overwhelming blood-poison, Dr. Billington said that he had anticipated the objection, and had endeavored to meet it in the paper which he had read. He thought that, in considering this point, one generally admitted principle should have its due weight. That principle was, that it was not in the exceptionally malignant forms of any disease that we could best study its natural history. Diseases—especially specific ones—could, for obvious reasons, best be examined and analyzed in typical cases of medium severity. He thought that the difference between the nerve-disturbances, often seen at the onset of such cases of scarlatina, and those that occurred early in the most malignant forms, was one of degree, rather than of kind. He referred to cases of ordinary follicular tonsillitis which he had himself seen in young children, accompanied by convulsions and other severe nerve-disturbances and high temperature, and thought that the still more intense local irritation, which he had pointed out as probably present in the scarlatinal angina, might account for the greater severity of the earlier phenomena in malignant cases. This being the starting-point, blood-change and other complications would, as he had further indicated, follow with es-

pecial rapidity.

Dr. Beverley Robinson referred to the fact that some attempts to inoculate diphtheria in the fauces had been unsuccessful, and remarked that, owing to the greater thickness of epithelium in that situation, local absorption of poison would be less likely to occur there than further down in the air-passages. He also stated that he had, in some instances, seen faucial redness contemporaneous with primary chancre.

The Academy then adjourned.

Stated Meeting, March 21, 1878.

LAPARO-ELYTROTOMY AS A SUBSTITUTE FOR CÆSAREAN SECTION.

Dr. T. GAILLARD THOMAS read an important paper upon the above subject, gave a detailed report of all the cases in which the operation had been performed, and set forth the advantages which it had over that of Cæsarean sec-

The operation had been performed only once prior to the date at which Dr. Thomas performed it in 1871, and then by Ritgen. It had been performed upon the living woman since that date five times, three times by Dr. A. J. C. Skene, of Brooklyn, and twice by himself. Of the five mothers three were living, and the number of children delivered alive was four. No such results could be shown for the Cæsarean section, and no better results had followed embryotomy. All the cases had been reported and published, with the exception of the last, which was op-

erated upon in December, 1877.

The operation was simple, and consisted of making an incision through the abdominal walls, from the spine of the pubes to the anterior superior spinous process of the ilium, lifting the peritoneum, making an incision through the upper portion of the vaginal wall, tilting the body of the uterus over to the opposite side, and then, through the dilated cervix, delivering the child by version, by the forceps, or by extraction. Delivery was to be effected by version in arm-presentation; by forceps when the head presented; and by extraction in breech-presentation. Hemorrhage was one of the things to be feared in the operation; but, in five cases, no hemorrhage had occurred, and why should it occur in future operations? But, even

admitting that hemorrhage occurred, it became a question whether the risks should not be taken, because the risks of peritonitis and shock following other operations were The dangers of Cæsarean section were peritonitis, metritis, hemorrhage, shock, incarceration of the intestines in the uterus, and septicæmia. By the operation of laparo-elytrotomy the danger from peritonitis, meritis, and incarceration of the intestines was entirely avoided, and, in a great degree, the danger from septicæmia and shock was diminished. The operation might be followed by hemorrhage, and, in place of peritonitis, cellulitis might be developed. Dr. Thomas did not regard laparoelytrotomy as yet an established standard operation, but he did regard it as an operation sufficiently tested by experiment to deserve a careful consideration at the hands of the medical profession.—Medical Record.

Ano-Pelvic Version---A Method Applicable to Difficult Cases.

This is the name given by M. Gueniot to a method of version which, though not original with him, has not hitherto been described in detail. He has employed it for a number of years, and believes it to be applicable to difficult cases, such as shoulder-presentation, with tetanic contraction of the uterus, where evisceration of the fœtus is decided to be impracticable or inefficacious. It consists essentially in employing the weight of the body to assist the hand in penetrating to the fundus of the uterus, and in making traction on the public arch or the sacrum of the fœtus by means of the finger introduced into its rectum, and curved in the form of the crotchet. The hand being introduced into the vagina, the accoucher presses his body forward until it rests against the operating elbow, and then brings his weight to bear with more or less force on the point of the olecranon and the posterior surface of the arm. The forearm being thus pushed forward, carries the hand, as it were mechanically, into the uterus, and forces it along toward the breech almost without fatigue or exertion. When the breech is found, the forefinger should be introduced into the rectum and traction made on the pubis or the sacrum, so as to draw the pelvis of the child into the excavation. It is usually much less

difficult to find the breech than to seize a foot or a knee. The method also possesses other advantages: the pubis or the sacrum of the child affords a firm hold to the finger, and, the traction being direct, the force employed is completely utilized. The method may also be resorted to after podalic version has been tried and failed.—Gazette Med. de Paris.

MICROSCOPY.

San Francisco Microscopical Society.

President Ashburner's Annual Address—Papers by Messrs. Moore and Clark—A Strange Fungus—The Laurel Wood Borer—The Vibration Microscope and Music—Atoms.

THE regular meeting of the San Francisco Microscopical Society was held on Thursday evening, March 21, President Hyde being in the chair. The chief feature of the evening was President Ashburner's annual address.

Gentlemen:—I owe you all an apology for having postponed until this evening my annual report, which should have been submitted February 7; but an unavoidable absence from the city prevented my attendance on that occasion, and now I feel that whatever I may say can have but little interest. Your new Board of Trustees have been elected, and have entered upon their duties with zeal; the new machinery is working well and smoothly, and, in retiring from office, I can now only wish you most sincerely a continued career of success.

At the close of our last fiscal year our financial condition was eminently satisfactory, which, without making any invidious comparisons, is more than can be claimed for many scientific societies. The Treasurer's report showed a cash balance on hand of \$887.40, together with \$187.50 due from from members, making a total of \$1,074.90 of cash assets. This is substantially what we had on hand at the close of the previous year, so that, although "hard times" have afflicted this community to an unprecedented extent, and probably few among us can say we are better off now than we were a year ago, our Society, if it has not progressed, has, at least, been kept from running behind.

We have held 23 meetings during the year, only one, that of September 20, having failed for want of a quorum. The average attendance at these meetings was again between 11 and 12 members.

Our annual reception was held, as usual, in the Mercantile Library Hall, on the evening of May 24. It was well attended, and the customary amount of interest on the part of our guests was displayed. These entertainments have now become almost a portion of social life in San Francisco, and are looked forward to by our friends with increasing anticipations of pleasure, as well as instruction.

Our library has been increased by the addition of forty bound volumes, and now contains 277 volumes. We have taken, during the year, the same periodicals as before, and the only addition to the list being the *Journal de Micrographie*, of Dr. J. Pelletan.

Our general cabinet has received additions, chiefly in the way of specimens of diatomaceous earth from various localities on the Pacific Coast, presented by the State

Geological Society.

Our cabinet of slides has been carefully catalogued by the Librarian, Mr. Clark, and now contains 859 specimens, the increase for the year having been 336, the most notable additions in this department being two centuries of the collection of typical diatoms, by Prof. H. L. Smith. These were obtained by purchase, and a notice of the order was given at the last annual meeting.

I have no mention to make of any additions to the

stock of apparatus.

During the period now under review, original papers or translations have been contributed by our members as follows:

From Dr. Wythe, a paper, accompanied by illustrative drawings, on the "Light-Receiving-Organs of the Octo-

pus."

From Mr. J. P. Moore, three papers on Fungi, two of which were technical descriptions of three varieties of funguses, and the other, which possessed a more general interest, upon "The Edible Fungi," growing in the vicinity of San Francisco. This paper has been published in full by the Alta newspaper.

From Dr. Harkness we received one paper upon "The

Erysiphe Graminis, or Wheat Mildew;" and, from Mr.

Kinne, one upon "The Trichobosis, or Grain Rust."

From Mr. Hanks we received two papers, one entitled a "Mechanical Finger," and the other upon the "Divisibility of Gold." The first of these was considered worthy of being published in the Monthly Microscopical Journal, of July last.

From our Vice-President we received a paper upon "Spontaneous Generation," giving a review of what has been proved experimentally on this subject, and showing the present state of the discussion which has at times

been conducted with so much acrimony.

From your President you received a translation of a paper read before the Belgian Microscopical Society by

Julian Deby, entitled "What is a Diatom?"

And now, gentlemen, in bidding you an official farewell, it only remains for me to express the earnest hope that our Association is entering upon a renewed and continuous career of prosperity and usefulness. Mankind is so selfish, and, perhaps, also envious, that you may rely upon no institution, whether social, religious, political, or scientific, existing much longer than it proves useful and of valid benefit to society; and I think I am not asserting too much when I say that every one of the many religious or secular institutions which are now to be found scattered over the civilized globe, were begun in a small way to meet the necessities, or gratify the aspirations, of a few individuals. If the want proved a public one, they thrived by a process of natural accretion; otherwise they soon died out and disappeared, frequently leaving behind scarcely more than the recorded expression of their existence, and having failed to make any impression upon society or the civilization of the day. In fact, our modern civilization appears to be based upon the ground-work of an enlightened self-interest, without which the whole scheme would crumble and fall to pieces.

Mr. J. P. Moore read the following papers, the first on a strange new fungus which he exhibited, naming it

POLYPORUS (MERISMA) KALAKAUA.

The entire plant is of beautiful rich dark chestnut, and polished as if varnished.

It was found growing on a boat that had been thrown up on the beach near Honolulu, Sandwich Islands, and

was presented to me by Mr. Thomas Jennings, of this

city.

I have taken the liberty to name it in honor of His Majesty King Kalakaua, through whose efforts in behalf of our branch of study, the Royal Microscopical Society of the Sandwich Islands has been recently established, and who has ever shown himself a lover of science.

Mr. Moore's second paper was on that growing pest of

our furniture and cabinet-makers, the

LAUREL WOOD-BORER.

In a former article I alluded to the ravages of this insect, and stated that I had not yet fully learned its life history. Since then I have been fortunate enough to hatch numerous specimens, so that I now possess the insect in all stages of its life. I discovered, on the first day of January, of this year, the larvæ, the chrysalis, and the mature insect. These I placed in favorable conditions, and have been able to study them. I can not say precisely at what time the mature insect appears in our forests, but, in sunny exposures, should say that it was some time in February, or as soon as the sap begins to flow in the The mature insect, generally the female, for protection, hibernates in the already bored holes. From these she emerges in the warm spring days, and begins her work of piercing the bark of the young wood and depositing her eggs.

The egg is soon hatched by the warm sun, and the larva begins its work of boring. After boring for a considerable distance, it chambers out for itself a place, and changes to the chrysalis state. In a short time, if the weather be favorable, the insect is hatched, and makes a straight and rapid cut for the outside. I do not know how long it takes it to cut its way out, but I have seen one bore its way into fresh wood and completely hide itself in a few hours. On boring out, the insect escapes for its work, and the wood or furniture, as the case may be, looks as if fine shot had been fired into it. Now, as to the trouble from this insect in our furniture, I am quite certain that it arises from either the intentional or careless use of lumber already infested by the larvæ. These puttied up places are the ones whence the trouble springs. I am told, on what seems good authority, that timber cut in the fall is less liable to its ravages. In the course of my inquiries I learned that, in several instances where the laurel has been used in ship-building, it had been shown that, when cut in the fall, it had shown no signs of insect work; but in one case, certainly, it was known that the wood which was used had been cut in the spring, and had suffered severely. This matter needs investigation. In the case of lumber for use in furniture, I have no doubt that the larvæ or ova can be destroyed with a little care. I would suggest that, instead of the ordinary kiln-drying by continuous heat, the lumber be subject to a moderate heat and then allowed to cool. Let this process be repeated for several times, at intervals of a few days, and I feel confident that all germs, whether of the dry rot, Mervulius Lacrymaus, or of the insect in question, will be thoroughly destroyed.

For the scientific description of the insect I take pleasure in referring you to our able entomologist, Mr. Hy.

Edwards.

Mr. Xenos Clark then read a paper on

THE VIBRATION MICROSCOPE.

In modern scientific research there is hardly any department in which the microscope is not used; it is alike invaluable to the anatomist, the zoologist, the mineralogist and the chemist. This is to be expected, for the microscope is an instrument for investigating bodies and motions, not of this or that particular class, as the scalpel is for tissues, or the galvanometer for electrical currents. but bodies and motions of any class, provided they be minute. The investigator simply applies to his eye a highly elaborated external appendage, and goes about looking at things—he may look at anything, and for any purpose, provided only this thing be visible and minute. How, then, about those minutest of all things, the incessantly vibrating molecules and atoms, of which the physicists tell us ?—why do we not hear of the microscope in physics?

There is a physical microscope, the vibration microscope, invented by the French physicist, Lissajous, to investigate the exceedingly rapid motions of sound-producing bodies. The importance of such an instrument is evident when we remember that, since sounds are produced wholly by the vibrations of bodies, all the differences among sounds, pitch, intensity, timbre, must result

from differences in the vibrations of the sound-producing Now it is found that the rapidity of the vibrations determines the pitch, so many per second one note, so many another; that on the width or amplitude of the vibration depends the intensity or loudness of the sound: but that the timbre or quality of tone (that which makes the difference between the same notes sounded on different instruments, as the violin and piano) results from the peculiar form of the vibration or motion itself. If the motion of a ball, being thrown to and fro by two boys, be taken to represent the vibrations producing a given tone, then the distance between the boys will determine the tone's loudness, the frequency of the ball's passage, the tone's pitch, and the form of line described by the ball. high or low, bounding, jerked, skipped, curved or straight, the tone's quality or timbre.

It is for this purpose, to discover the forms of motion of vibrating bodies, and hence the causes of their peculiar

timbres, that the vibration microscope is used.

[CONTINUED.]

Fairmount Microscopical Society.

THE regular meeting of the Fairmount Microscopical

Society was held Thursday, March 21, 1878.

Owing to the recent appointment of the President, Dr. Griffith, to the position of Assistant Surgeon, U. S. A., his resignation as President was read and accepted. He was then elected a corresponding member, and a vote of thanks passed for his efficient services in our Society. Dr. W. H. Baker was then elected President pro tem., until the next annual meeting.

Communications were read from the N. Y. Mic. Society requesting co-operation in having Postal Laws so amended as to allow microscopical objects and objectives to pass without detention. Considerable time was spent in discussing the best way and proper means to be used in furtherance of the object. After examination of objects the Society adjourned.

WM. C. STEVENSON, Jun.,

Secretary.

BALTIMORE, MD., April 4, 1878.

Dr. J. A. Thacker:—Dear Sir—A word or two about turn-tables may be of use to some fellow-worker, and I

ask the privilege of offering the following:

A great deal of praise has of late been bestowed upon the turn-table devised by Mr. Cox. To a certain point this praise is deserved; but as no adequate provision in it is found for centering, when the cover is appreciably out of center, the unfortunate owner, finding this vexing emergency spring upon him, stops praising, and falls to wishing the estimable inventor had been destined for some future age. It is vain to say to the owner that he ought always to have the cover exactly in the middle of his slide. In mounting single, very small objects under a small cover, it is possible to hit the precise location by helps of an inking, and to make the circle keep its place; but in mounting compound slides of vegetable tissue, or of dissected insects, the rule in the former case becomes the exception in this. More or less slipping will take place, even if the cover be accurately adjusted at the beginning. It is safe to say, that of twenty-five slides of the kind last named, with or without rings, not five will, when ready for finishing, be exactly where they should be. The usefulness of the machine in question, or of any fashioned in like manner, comes abruptly and completely to an end, at this most trying point of slide-making. It is true an attempt has been made to remedy the fatal defect, but the device gives more trouble in the adjustment than it is worth.

Not being an inventor myself, also in no wise interested in any invention whatever, I have wondered why somebody, who is both of these things, did not think of some simple way to blissful satisfaction on the part of the diligent worker. One way to such a result long ago began to haunt me. I will offer it for what it is worth. Take a Matthews' pattern, and drill a threaded hole horizontally through the right-hand lever about one-third of the distance from the further point to the center. Fit a screw to this hole, and fix a small milled-head to the outer end of the former. Let the screw be of sufficient length to push the slide any desired distance before the milled-head strikes the plate. Leaving the left-hand lever a little loose, the slide can be centered in a few seconds by turn-

ing the milled-head. The brace can then be thrust up,

and the slide perfectly secured, as usual.

I will add a brief description of a method of drawing rings on paper. A Matthews' turn-table is used. Two wedges, of the thickness of the levers, an inch long and half an inch wide, are cut out. One edge of each wedge is evenly shaved away about half the thickness; in use, the shaved side upward. The slip of paper is laid between the levers; one wedge is placed on the paper between the nearer ends of the levers; the other wedge in like position near the opposite ends. Holding the outer wedge with the forefinger of the left hand, and the other with the thumb, push up the brace. The paper will be found so securely held that any number of rings may be drawn upon it with a pen or brush, with no danger of displacement.

Very truly yours,

L. R. PEET.

New York Microscopical Society.

A REGULAR meeting of this society was held on the evening of February 1, Mr. Whitehead, the Vice-President, in the chair.

Some donations were received, and the following gentlemen were elected active members: Joseph Yates, C. F. Cox, Jay L. Smith, F. Collingwood, Chas. S. Shultz.

A paper was read by the Secretary on the use of salicylic acid in mounting. The experiments were principally made with marine algæ, different specimens of which were mounted in salicylic acid, glycerine, and carbolic acid, and after a time compared. Glycerine was found to be the best medium for general use, preserving the color more perfectly than either of the others. Carbolic acid preserved the color little better than salicylic acid. Salicylic acid not only removes color, but acts as a reagent. To make out certain structures, it is very valuable, but it is not well adapted as a general medium for mounting algæ. In his hands the method of Stodder for mounting algæ in balsam had failed entirely.

R. HITCHCOCK, Recording Secretary.

A regular meeting of the New York Microscopical Society was held on the evening of March 1, the President,

Mr. J. D. Hyatt, in the chair. The minutes of the pre-

ceding meeting were read and approved.

Donations were received from several members, among which were some foreign deposits of diatoms, quite valuable and rare. Several new members were proposed. Prof. A. A. Julien read a paper "on a new mounting bottle for Canada balsam." This is an elegant and convenient piece of apparatus, from which the balsam can be expelled by pressure of the hand, and the quantity employed nicely regulated. A paper was announced for the next meeting describing a cheap and convenient case

for collecting microscopic objects.

The subject of unjust postal charges on slides, which had been previously referred to a committee for consideration, was brought up and discussed. Prof. Phin made a few pointed remarks on the subject, and read extracts from a new bill proposed by Boston publishers. This bill is very advantageous for publishers, but for scientific men and those who desire to make exchanges, it may, and probably will, prove very annoying and very unjust. He spoke of it as a "postal law for the discouragement of science," and compared the liberal interpretation of the postal laws of England with the narrow-minded and oppressive action of our officials here.

The law now proposed will exclude slides from the mails more rigidly than does the present one, and the committee was instructed to take immediate action in

the matter.

R. HITCHCOCK, Recording Secretary.

GLEANINGS.

BARK AND IRON.—A text-book of physiology, published some twenty-five years ago, states that the red corpuscles of the blood, when viewed through a miscroscope, "resemble in shape a spangle, with the dot of iron in the center, occasioning the humorous remark that the wheels of life run on iron axles." Only "the poet's eye in a fine frenzy rolling," or some equally imaginative optics, could see such a sight as that through a microscope; but it is nevertheless true, metaphorically speaking, that the wheels of life have iron axles. The iron in the blood

forms an insignificant percentage of its weight, but the importance of the metal bears an inverse proportion to its amount. It is like the axle of the driving-wheel in a complicated machine; if it gives out the machine stops at once. It is a curious coincidence that the chlorophyl, or green coloring-matter of plants, like the hæmoglobin which gives the red hue to the blood, is dependent for its development upon the presence of iron. The plant is a pale and sickly thing, if this chlorophyl be imperfectly developed; and so is man if the ruddy hæmoglobin be deficient in his blood. In either case, if iron is lacking, it must somehow be supplied, or the whole system suffers. Hence, as Binz, one of the latest and best authorities on therapeutics, states it, iron is useful "in all cases in which, for any reason, the improvement of the quality of the blood is indicated, but where fever is absent, and the functions of digestion are not seriously impaired." Upon this point, indeed, all authorities are agreed. "Doctors differ" as to the value of many therapeutical agents, but iron is not one of them

And the same may be said of cinchona, or "Peruvian bark." Ever since the Countess of Cinchon was cured of fever by the bark, in 1639, and Linnæus named the tree Cinchona in her honor, this has held a distinguished place in materia medica throughout the world. Hundreds of barks are used in medicine, but this is the bark; no other is so pre-eminent in its class as to be spoken of simply as "bark." No perfect substitute for it has been found in the organic or inorganic world, and all enlightened nations are considering the problem of keeping up the supply of the precious plant. The leading governments of the world make the extension of its culture a question of State interest. The product of the South American tree is reckoned indispensable for "the healing of the nations." It is the representative tonic, possessing in the utmost perfection the restorative and invigorating properties of that group of medicines.

The advantages of combining bark and iron have been recognized by physiologists and physicians for many generations, and officinal and non-officinal preparations without number have been devised for this purpose. Most of these have had only a transient popularity; a few have stood the test of long-continued trial, and have won a justing reputation with the profession and the public.

Among the latter the well-known "Elixir of Bark and Iron," introduced by Messrs. J. R. Nichols & Co., twenty years ago, may fairly claim a leading place. From the first it was received with marked favor by medical men, and there can be no better proof that it was really worthy of tneir indorsement than the fact that the demand for it has steadily increased down to the present time. It is now recognized as the standard preparation of the kind, and physicians and others who have occasion to use "bark and iron" will do well to order it it in preference to any substitute of doubtful or inferior reputation. It is important that "Nichols'" should be specified, as the manufacturers inform us that they receive many letters from physicians expressing their disappointment in the use of other preparations purporting to be the same, or similar.

THE TREATMENT OF ASTHMA.—Professor Germain See has recently read a paper before the Paris Acacemy of Medicine, in which he expresses himself very enthusiastically concerning the efficacy of iodide of potassium and iodide of ethyl in the treatment of asthma. He has been investigating the subject for the last nine years, during which time he has had a large number of cases under his care. He has satisfied himself that most of the medicines hitherto used in asthma exert only a temporary and doubtful effect. They may relieve the paroxysms, but do not prevent their recurrence. He has sought to cure the disease, not merely to palliate it, and thinks that, in these iodides, he has found the means of accomplishing the desired end. His method is thus summarized in the London Medical Times and Gazette:

He dissolves ten grammes of iodide of potassium in two hundred of wine or water, and gives before each meal, twice a day, a dessert-spoonful (eight or nine grammes), so that the patient takes daily sixteen or eighteen grammes of the solution, or 1.8 grammes of the iodide. After some days this quantity is gradually doubled. The same doses may be taken in syrnp of orange-peel. If the patient becomes disgusted with the taste, he may take the iodide in wafers. There is no definite time for the duration of the treatment, but generally at the end of two or three weeks, when the attacks are mitigated or abolished, the dose may be diminished to a gramme and a half per diem. From time to time the treatment may be interrupted for a day,

but a longer interruption may be followed by a relapse. In one case a patient, who had been cured for a year, having given up the iodide for four days, was again attacked. Any accompanying cough may be relieved by the addition of a little extract of opium, or syrup of poppies; while, when there is not much cough or catarrh, two or three grammes of chloral, given in the evening, assist in diminishing the dyspnœa.

The effects of the iodide on the asthma and its parox-

ysms are: (1.) The respiration becomes free in about two hours; and, when it has been administered some hours before the paroxysm, the development of this is almost certainly prevented. The second paroxysm is suppressed with certainty. (2.) The respiratory murmur can be heard in regions wherein it was suppressed. (3.) Recent emphysema disappears, with the exaggerated sonority dependent upon it. (4.) The rales cease to be sibilant, and become mucous, allowing of the penetration of air. (5.) At the end of some hours the orthopnæa and emphysema have given place to normal respiration, intermingled or not with disseminated mucous rales. (6.) When the

asthma is chronic, with permanent emphysema, if the treatment be continued after the subsidence of the attack, not only do the paroxysms totally cease, but the emphysema and oppression habitual to the asthmatic entirely disappear, especially in dry asthma. In catarrhal asthma

the catarrh may persist for a longer or shorter time after the dyspnœa has disappeared. (7.) When the asthma is due to a valvular lesion of the heart, the effects produced are but slight; but when it is connected with degeneration, or hypertrophy of the cardiac tissue itself, the iodide treatment leads to the dissappearance of the dyspnœic element.

As inconveniences of a prolonged employment of the iodide may be mentioned: (1.) Oozing of blood from the

As inconveniences of a prolonged employment of the iodide may be mentioned: (1.) Oozing of blood from the mouth and fauces. (2.) Hæmoptysis. This occurs only in those predisposed to tubercle; and in all such subjects, and even when the diagnosis is doubtful, the iodide must be prescribed. (3.) Loss of appetite and disgust at food. For this it suffices to suspend the treatment for a day, from time to time, and to diminish the dose during a week. (4.) Emaciation. This is not a contraindication, for, at a later period, the patients may recover their flesh.

The general result is that a cure takes place in almost

all cases, even when the patients are placed amid atmospheric conditions which are habitually injurious. The patients also resist far better the changes of temperature, the influence of heat and cold, the action of the wind and of dusts. No precaution has to be taken as regards hygiene and regimen, and the use of coffee and tobacco has not seemed to be injurious.

Professor See has employed inhalations of iodide of ethyl in five cases of asthma, and the paroxysm was arrested in all very rapidly. In three cases of cardiac dyspnæa it also acted favorably, and in two cases of chronic bronchitis, accompanied by dyspnæa, the effect, although much less prompt, was advantageous. Quite recently, in a case of ædematous laryngitis, inhalations repeated ten

or twelve times a day effected a cure.

The general conclusions to be drawn from the paper are: (1.) Iodide of potassium constitutes the most certain means of curing asthma, whatever its origin may be. (2.) The iodide of ethyl relieves the paroxysms of asthmatic dyspnæa with great rapidity. It also appears to act advantageously in cardiac, and even in laryngeal dyspnæa.

QUININE EXANTHEM.—Prof. Kobner, of Breslau, reports the case of a large, powerfully built woman, twenty-eight years of age, who was attacked with a syndrome closely resembling that of scarlet fever whenever she took even a small dose of quinine. The symptoms consisted in a chill, which was sometimes repeated, a feeling of precordial anxiety, nausea, vomiting, intense headache, high fever and angina. A few hours after the chill an erythematous eruption made its appearance on the face, and spread rapidly over the entire body. It was attended by intense burning and itching, by slight ædema of the face, and injection of the conjunctiva. The color disappeared for a moment on pressure. The eruption on one occasion completely covered the entire body; on another it was confluent on the upper part of the body, but discrete on the legs. On this occasion the eruption on the legs was slightly papular, and the lower border of the confluent part was not sharp, but gradually faded into the healthy skin. After a variable length of time, according to the amount of quinine taken, the symptoms abated and desquamation began. The angina affected only the posterior

wall of the pharynx, the soft palate and pillars being normal. Three times in the course of five months the patient was seized with these attacks. The first time, the exanthem broke out after $3\frac{1}{2}$ grs. of quinine had been taken. As a diagnosis of scarlet fever was made, the quinine was continued for eight days, and the eruption persisted for the same length of time. Desquamation then began, and continued for six weeks, and on the soles of the feet, in fact, for nine weeks. The fever was high and persistent, and the prostration was very great.

Three months later the exanthem reappeared, after a dose of $2\frac{1}{4}$ grs. of quinine. The stage of eruption lasted four days, and the desquamation three weeks. The third time, the exanthem made its appearance after a dose of only $1\frac{1}{2}$ gr. of quinine. The stage of eruption lasted only two and a half days, and the desquamation fourteen days. The affection this time ran a milder and shorter course

than on the two previous occasions.

Dr. Von Heusinger, of Marburg, states that he has met with two cases in which symptoms entirely analogous to those described above were produced whenever even very small doses of quinine were administered. In these cases, however, the eruption was confined to the face. Both patients were women. One of them was at one time able to take quinine without inconvenience.—Berliner Klinische Wochenschrift, May 28 and June 18.

FOREIGN BODY IN THE MIDDLE EAR WITH UNINJURED MEM-BRANA TYMPANI.—Dr. Schalle reports a case in which a sudden pain in the right ear was complained of, while the nasal douche was being employed. The patient was deaf on the left side, from the detonation of a cannon-shot, but the drum on the right side was normal, except that there was congestion along the handle of the hammer. The douche was administered by means of a two-ounce rubber syringe. In spite of the use of leeches, purgatives and low diet, and enforced rest in bed, an acute suppurative inflammation of the middle ear on both sides was developed. Paracentesis of the drum was performed on the right side, and a thin purulent fluid was evacuated. days later a black object was seen between the lips of the small wound, and, after careful and patient manipulation, Dr. Schalle succeeded in seizing it with forceps and drawing it out. The foreign body was brownish-black in color, irregularly cylindrical in shape, and about one-fourth of an inch in length by one-eighteenth of an inch thick. On examination it was found, as had been suspected, to be a piece of hard rubber. After the removal of the foreign body, the inflammation yielded to treatment. Four weeks later the incision had healed, but the drum had not yet regained its normal appearance. A watch was heard on the right side, at about one-tenth of the normal distance.—Berliner Klinische Wochenschrift, July 30.

THE COLD-SOUND (PSYCHROPHOR), A NEW INSTRUMENT FOR TREATING POLLUTIONS, SPERMATORRHEA AND CHRONIC GONOR-RHEA.—A little over a year ago Dr. Winternitz, of Vienna, designed an instrument by means of which he secures the advantages of the mechanical irritation of the urethral mucous membrane by the metallic sound, combined with the anæsthetic and tonic influence of cold. It consists of a double current catheter without eyes, the two canals communicating with one another near the point of the instrument. The instrument is introduced into the urethra until its point has passed the pars prostotica, and it is then attached by rubber tubing to a reservoir containing water at the desired temperature. On turning a stop-cock, the water flows into one canal and out through the other. whence it is conducted away by another piece of tubing. In this way the caput gallinaginis and the entire urethral mucous membrane are exposed to the mechanical action of the pressure, and to the sedative action of cold, success obtained by Dr. Winternitz, by the use of this instrument, was so encouraging from the very beginning, that he has employed it constantly for over a year.

The Eucalyptus.—The Chemist and Druggist says that Garibaldi acted wisely when he advocated the introduction of the eucalyptus to combat the malaria of the Campagna. Every fresh piece of evidence relating to this tree confirms those expectations which have been formed respecting its beneficial influence. Very valuable information is contained in a report from Algiers, forwarded by Consul-General Playfair. The Consul gives a remarkable instance of the action of the eucalyptus in removing miasmatic influence, and thus improving the sanitary condition of an unhealthy district.

GRINDELIA ROBUSTA in ten drop doses of the tincture for a child two years of age, is claimed to be curative in cases of whooping-cough, if repeated every two hours for three or four days.

BOOK NOTICES.

Hand-book of Ophthalmology. By Prof. C. Schweigger, of the University of Berlin. Translated from the third German edition by Porter Farley, M. D., Rochester, N. Y. With Diagrams and other Illustrations. 8vo, pp. 555. 1878. Philadelphia: J. B. Lippincott & Co. Cincinnati: R. Clarke & Co.

Eminent as the author of this work is, we have no doubt it will take rank among the standard works in that department of medicine to which it belongs. The various derangements and diseases of the eye are very carefully and fully discussed, and the most approved treatment of the

present day perspicuously described.

Opthalmology is a department of medicine which has been making most rapid improvement. In consequence of advance in pathology, and in the materia medica and therapeutics of diseases of the eye, the treatment of ocular affections have been very much changed of late. The consequence is that works that were authorities but a

short time ago no longer hold that rank.

This work of Prof. Schweigger is the very latest ophthalmological work that has been issued, and consequently may be regarded as fully abreast of the present advanced knowledge. The fact that it has passed through three editions in Germany, where ophthalmology, more than in any other country, is made a specialty of, shows in what high estimation it is held there. We have no doubt it will meet with a cordial reception in this country.

The translator, Dr. Porter Farley, seems to have discharged his work well. The publishers, Messrs. Lippincott & Co., of Philadelphia, have gotten out the work in a very

creditable manner.

EDITORIAL.

PARRISH HALL.—Our readers may find it advantageous to note details of this Home for Opium Habitues, given

in last number of Medical News. The institution is worthy of patronage.

A New Medical College.—We are just informed by a former pupil of ours, Dr. Julius Wise, son of Rabbi Wise, formerly of Cincinnati, now of Mephis, Tenn., that the physicians of that thriving Mississippi city, himself among the number, have taken steps to inaugurate a new medical college. We wish them success. We do not see but that the Memphis doctors have as good a right to be professors as those of other cities.

INSANE ASYLUMS OF NEW YORK TO BE INVESTIGATED.—In the New York Assembly, March 25, Mr. I. I. Hayes offered

the following:

"Resolved, That a committee of five be appointed, with full power to send for persons and papers, to take testimony, and to employ counsel and such clerical force as shall become necessary, including a stenographer, to investigate the insane asylums of the State, and to report at their earliest convenience what legislation is necessary for the welfare of the inmates of these institutions."

It appears that something is wrong in the New York Lunatic Asylums, as Mr. Hays said that he was induced to offer the resolution at the urgent request of leading physicians of New York City, where complaints against the management of these institutions were so numerous and of such character as to demand some attention at the hands of the Legislature.

R. C. S. R.

DR. C. W. BERNACKI.—We take pleasure in recommending this gentleman, who conducts an advertising agency, to such of our friends as have any business to execute in New York, such as the purchase of books, instruments, etc. He spares no efforts to accommodate, and his charges are the most reasonable. In case of articles having a catalogue price, as books, we believe he requires only a remittance to that amount. Recently, he looked up and obtained for us the Penny Cyclopedia, twenty-seven volumes, a work long ago out of print, and which we had been ourselves trying to obtain for a year or more in some of the bookstores of Cincinnati which make a specialty of

old books, without success. Dr. Bernacki procured it for us in less than a month after we gave him the order—the volumes being in excellent condition. The price was very low indeed.

By the way, the Penny Cyclopedia is one of the finest works in the English language. It was commenced in the year 1833, and was completed about 1843. Its contributors, 179 in number, were of the most learned men of Great Britain. No encyclopedia has ever surpassed it. Those that have been published since it bring up the subjects to a more recent time, but the biography and history of the last thirty years is at the expense of abbreviating, more or less, the biography and history of that previous to it. We may, at some future time, copy articles devoted to Harvey, the discoverer of the circulation of the blood.

Mr. Cook and the Microscope.—All of our readers have undoubtedly heard of the lectures which Mr. Joseph Cook, the eminent biologist, has been giving to large audiences every Monday in Boston. We give below an extract from a recent lecture of his. He gives but two more lectures. At his next lecture, the Boston Advertiser says, "the Hall will be darkened and photographs of the wonderful discoveries of Dr. Cutter, of Cambridge, and Dr. Harriman, of Boston, of the change produced by certain diseases in the shapes of blood corpuscles, will be thrown upon a screen:"

"I hold in my hand a most respectable journal of microscopy, published in Paris. There is in it an elaborate account of microscopical investigations conducted in Massachusetts by two of her experts, Dr. Cutter, of Cambridge, and Dr. Harriman, of Boston. These gentlemen have made photographs of the healthful and diseased appearances of the disks of the blood. You know that the blood is made up of three elements—a thin fluid, a multitude of red disks, and a few white corpuscles. The red disks and white corpuscles of the human blood science has put under the microscope and found that they change their shape in different ways in different diseases. The claim is now made that the character of certain diseases can be found out by ascertaining the changes which have been produced in the shape of the blood corpuscles. The audience sees this handkerchief [holding up a handkerchief folded into a flattened ball]. Suppose it be folded into a round mass or disk of symmetrical proportions. Now suppose that there shoots out of it a root at the lower part [changing the shape of the folded mass]. The change between the round form and that caudated form is not greater than certain diseases produce in the form of the red blood corpuscle, and especially in the white. This lectureship has been accused of taking facts at second hand. Next Monday at 11 o'clock the great hall of Tremont Temple will be darkened, the best microscope in Boston will be put in that gallery, representations of these disks will be thrown upon a screen here by the stereopticon. The results of certain recent Boston researches, of which

this French journal speaks so highly, you will have an opportunity to see, the first of all audiences in the world. [Applause.] The red blood corpuscle, when properly magnified and thrown upon the screen, will have a diameter of some ten or twelve feet. The gentlemen who have volunteered to assist the lectureship in putting these facts before the public are those who have given great professional attention to the matter, and who are commended in the warmest terms in the Journal de Micrographie (November, 1877, pp. 309-10), both of them by name. A large degree of commendation is here given to Mr. Tolles, our Boston maker of microscopes, who is regarded as a child of fortune because he has produced a one-seventy-fifth objective. Of this magnificent instrument you will have opportunity to make an inspection. The photographs which will be put before you are in large part its work. What may come from the investigation of the changes of shape in the disks in the blood I do not undertake to say, but this I do know, that science at the present moment stands with hushed breath before the question whether diseases can be traced by the changes they produce in the shape of the blood corpuscles. The blood is the life, we are told; and nearer and nearer investigation comes to the heart of biology. Science can show you the blood corpuscle changed by disease too infamous to be mentioned, from the round shape to a sprouted shape. On the topic of hereditary taints in blood you will need little eloquence on my part, after the facts at first hand, as ascertained by perhaps the best microscope in the world, have been put before you, first of all audiences on either side of the Atlantic."

A CALIFORNIA MEDICAL LAW.—A bill has passed both houses of the California Legislature, and is now (March 20) in the hands of the Governor of that State, for "The Protection of the Medical Profession and Society," which provides:

"1. That every person practicing medicine and surgery in the State shall present his diploma to the State Board of Examiners.

"2. That a certificate from the said Board of Examiners

shall constitute a license to practice.

"3. That every practitioner shall be subject to a code of ethics agreed upon by said Board, and 'it shall be treated as a violation of said code, and subject any practitioner to rejection, if he advertises himself as an expert in any particular branch of practice or any specialty."

This bill is, probably, a fair example of hasty legislation, such as is too frequently met with in the United States. A bill, born of professional prejudice, is introduced into one or the other branch of a Legislature, referred to a committee, reported back, and passed, with hardly a member (excepting its author) knowing the purport of the measure. The measure in question presents a combination of good and bad features. It is for the benefit of society to enforce measures compelling practitioners of medicine to show requisite testimonials of proficiency in

their calling, whether such testimonial be a diploma from a medical college, or certificate from a legally-organized State Examining Board. It is, however, a question whether or not a State Examining Board should be endowed with the power of regulating the ethics for the entire profession of a State. In fact, this would be a herculean task in some States, where, as in Illinois, the Board is made up with

representatives of conflicting systems of practice.

The bill provides for a code of ethics to be adopted by the State Board; and from the latter part of the third section it clearly foreshadows that the code of ethics of the American Medical Association is the one to be adopted. To adopt the old code in its entirety is to enact a This is clearly seen in the incident in question. The bill does not (nor does the code) prohibit the practice of specialism in medicine and surgery; it only decrees that the same shall not be advertised, because "it is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or hand-bills, inviting the attention of individuals affected with particular diseases" (vide code). Whew! regulate a man's dignity by law, eh? Right here it may as well be said as not, for it is believed, that it is far more honorable in a medical man to take a modest card to a newspaper office, and pay to have it inserted than to go sneaking around some reporter or correspondent for a "puff." Lewis A. Sayre made a demonstration of his plaster-jacket application for Potts' Disease, before the American Medical Association, at its meeting in Philadelphia, in 1876. A few months later he was recuperating (?) at Long Branch, where he fell in with that sycophantic scribbler, George Alfred Townsend. A few days later, there appeared in the Cincinnati Enquirer a long! communication from Long Branch over the signature of "Gath" (Townsend's nom de plume), that was a tissue of fulsome eulogy on Sayre; canonizing him for his (?) invention, and making the statement that the American doctors, in convention assembled, were such dunces that they could not comprehend Sayre's (?) method till the mighty surgeon sent out, picked up a hunch-back, swung him up and slapped on a plaster jacket. But Sayre didn't advertise. Never! and is, therefore, dignified quite up to the standard of California and the code. This is an isolated case, but hundreds more might be adduced. But more on the code anon. R. C. S. R.

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PRIGINAL CONTRIBUTIONS.

Body, Mind, Instinct, Intellect, Soul, Spirit, and Heart.*

Z. COLLINS M'ELROY, M. D., ZANESVILLE, OHIO.

A Physiologist's Understanding of What they are, their Union, and their Relations to each other in one Individual.

At the outset let it be distinctly understood that this is a study by one organized being, or the organic structure of one individual, of itself, and of like organic structures of his fellow-beings. It is purposely limited to human beings, though the mode is alike applicable to the study of all living beings, and things organic or inorganic. Or, still more explicitly, there is, and can be, no knowledge of either body, mind, instinct, intellect, soul, spirit, or heart, except through organic forms of structure of matter.

In this way, and it embodies the central facts concerned, a better understanding will be obtained of why different conclusions are, and must always be, reached by the organic structures of different individuals studying the same problem, or witnessing the same phenomena. For the educational influences, designed, or accidental, which determine the special forms of organic structure on which mind, or intellectual phenomena depend, vary for each individual. And, besides, each is, in fact, an individual, and is conscious of its own individuality. Ab-

^{*}From the Transactions of the Muskingum County Medical Society, April Session, 1878, held in the city of Zanesville, Ohio.

solute sameness must be at the expense of individuality.

Body, mind, instinct, intellect, spirit, soul, and heart are the occasion of much confusion when any individual is asked to state exactly what is meant by either, or all of these terms.

Body is defined as "the collection of organs composing the frame;" or "the material substance of an animal;" or "the material part opposed to the principle of life, or to the spirit;" or, "the material organized substance of an animal, whether living or dead." But, however varied by definition, the same conclusion, substantially, is reached. This may be considered clear and sharp.

Not so, however, when mind, instinct, intellect, soul,

spirit, or heart, come up for definition.

Thus, mind is defined to be, "the thinking faculty in man, with all its powers and operations; that by which we receive sensations, understand, and are affected with emotion or passion; the soul; the spirit;" or, "the intellectual, or intelligent power in man; the understanding, the power that conceives, judges, or reasons;" or, again, "intention, purpose, design, inclination, will, desire; the heart, or seat of affections."

Soul, as "the spiritual, rational, and immortal substance in man, which distinguishes him from brutes." "That part of man which enables him to think and reason, and which renders him a subject of moral government." "The vital principle, spirit, essence, or chief part," etc. Or, "that part of man which is considered distinctly from the material body, as giving it life, sensibility and understanding; the immaterial and immortal

part of man, the mind, the spirit."

Worcester appends a note as follows: "Soul, mind, and spirit are all used to denote the thinking principle in man. Soul is opposed to body; mind and spirit to matter. Soul is used in the active sense; mind commonly in the passive; the soul acts; the mind receives; yet we speak of a vigorous mind, not soul. Mind is soul without regard to personality. Soul is the appropriate mind, or the disembodied spirit, of the person under notice. We speak of the number of souls, that is persons, in a town; or of a person being the soul of society; and of the faculties of the mind as the will and understanding; the philosophy of the mind, the same as intellectual, or mental philosophy."

Spirit is defined. "The soul of man; the intelligent,

immaterial, and immortal part of human beings." "An intelligent being or substance imperceptible by our present senses." "Immaterial substance; immateriality."

Intellect, as follows: "The power of understanding and reasoning; that faculty of mind by which we receive, or form ideas; the thinking principle; the understanding." "The faculty of the human soul, or mind, which receives, or comprehends the ideas communicated to it by the senses. The faculty of thinking, otherwise called the

understanding."

These definitions (Webster and Worcester) make no clear distinction between mind, soul, spirit and intellect, which can hardly represent the facts of life, when they are studied in human beings in all mental states and conditions; as well as in savage, barbarous, and civilized states of existence. These several faculties, so to speak, of a living human body, mind, soul, spirit, and intellect, are absolutely dependent on, or, to speak more precisely, are manifested only through, or by masses of material designated brain-matter; though the totality of the body is ultimately concerned in their manifestation.

The ultimate fact, then, is, that nothing is, or can be, known of either body, mind, soul, spirit, intellect, instinct, or heart, except through organized forms of matter. And their recognition is, in like manner, the result of the operation, so to speak, of organic structures. It is, so to speak, again, the "reductio ad absurdum" of psychology. For, start out when or where it pleases any one in the investigation of this, or any other problem, a return must be made to the point of starting—an organic structure. This is formulated thus: Function, whether in the realms of organic or inorganic nature, is the expression of, or language of, structure. And every function of an organic being is the expression of the peculiar forms of organic structure from which it proceeds.

This all-pervading truth, as all-pervading as the realms of matter, is made all the more manifest by contrast; thus: Bone in the human body never performs the function of brain-matter. Nor, on the other hand, can brain-matter perform the function of bone, under any conditions or circumstances whatever. Bone in organic life is the emblem of stability; brain-matter the emblem of

instability, change.

As presented for study, mind phenomena are plainly sep-

arable into two classes, viz: instinctive and intellectual.

The definition of instinct is as follows:

"A certain power, or disposition of mind, by which, independent of all instruction or experience, and without having any end in view, animals are directed to do spontaneously whatever is necessary for the preservation of the individual or the continuance of the kind. Such, in the human species, is the instinct of sucking immediately after birth; and that of insects in depositing their eggs in situations most favorable for hatching." "Desire or aversion, acting without the intervention of reason or deliberation."

The line of separation between them is, however, shadowy, not sharply defined. A critical survey of them reveals the fact that the one part, viz: the instinctive, are provided for, as are other parts of the body, in the act of reproduction—i. e., perfect, or comparatively perfect, at birth—but they can be, and are, added to by experience, exigency, or necessity, through life. But the forms of structure thus added by experience, etc., are not transmitted to offspring in any perceptible degree, unless through long cycles of time, of which there are now no records, except geologically.

It is further seen that they, the instinctive, are mainly concerned with the preservation of the life of the individual possessor, and in the reproduction, multiplication and perpetuation of its kind.

Thus, a child has no need to be taught to swallow and digest food, or to see, or hear, or avoid enemies, real or supposed, on his or her part. Nor have any to be taught the acts needful for the reproduction of their kind.

Not so of the intellectual faculties. These have to be developed, or brought out by educational processes. And these educational processes must be applied mainly to the young.

Now, what does education, so called, really do to the matter of the brain? Are the intellectual faculties latent, so to speak; requiring only to be uncovered to bring them into use?

The facts are that the intellectual faculties are acquired in youth, matured in middle age, and are frequently lost in advanced life, and may be lost at any stage of life by accidental causes; the results constituting the various grades of insanity and dementia. In such accidental cases, as well as in advanced life, "changes" of "forms of organic structure" are invariably found in brain-matter after death.

What education really does do, therefore, is to give, or impress on, so to speak, on formless brain-matter, "forms of organic structure," which "forms of organic structure"

are inseparably associated with function.

The quantity of brain-like matter in human beings at birth is far too large to serve any useful or necessary purpose in the conservation of the individual, or the race, or kind; but it is needful to have this identical kind of material, and in the apparently surplus quantity, and in the identical chemical and physical condition in which it exactly exists in a human body at birth, to the end that "forms of organic structure" may be impressed or given to it by educational processes, which can be used only so long as they continue; for they are only reproduced, or preserved, in the constantly changing material of the brain-like matter while they are used; and then only during a portion of a long life. And, besides, they are not transmissible or transmitted from parent to offspring, either in whole or part; though a certain degree of proclivity, or facility for receiving educational results, seems to be transmissible.

It may as well be stated just here, that, so far, no assisted vision has been able to successfully demonstrate these "forms of organic structure," impressed, or given by educational processes; though it is thought that the sulci—depressions—between the convolutions on the exterior surface of the brain are deeper, and somewhat more numerous, in educated than uneducated persons.

The "heart," the supposed seat of the affections, is clearly partly instinctive and partly intellectual, and not a separate mind-endowment of human beings. Its basis is instinctive, but by educational processes is extended into the domain of intellect; that is, the "forms of organic structure" on which the affections depend, are, like all instructive phenomena, provided for in our organic natures, and transmitted from parent to offspring. But the enlargement of the heart, or affections, brought about by educational processes, like all other added "forms of organic structure," pass out of existence with the death of each possessor; unless their transmission by educa-

tional processes to others be regarded as an organic per-

petuation; which, it seems to me, it is not.

Of soul, or spirit, beyond our self-consciousness; that is, the self-consciousness of each individual, nothing is, or can be, known, only through "organic forms of structure." And the recognition of these is, and can only be, through like "forms of organic structure," in another individual. That there is an organic union between the soul, or spirit, and the body, no doubt can be entertained; though all in regard to it, after the naked statement of the union, falls outside of physical demonstration, and in the regions of conjecture. Of the soul, or spirit, for these are synonymous terms, meaning one and the same thing, nothing is, or can be, known, except through the "forms of organic structure," upon which self-consciousness of the possession, by each individual, of something pertaining to them which will survive their physical death depend. That is, again, nothing is, or can be, known, of soul, or spirit, only through a structural basis of matter; "forms of organic structure." I say nothing of Revelation, as my inquiry is purely physical. And it must be remembered always, that in any study of mind and body, or mind, soul and body, it is one set of organic forms of structure studying other forms of organic structure.

Having passed body, mind, intellect, instinct, heart, soul, and spirit, in review, it seems to be clearly established by the facts of life that a human body is thus com-

plex, viz:

1st. Materials.

2d. Forms of organic structure.

That is, the materials of a living human body are such as are common to nature; the forms of organic structure determining the functions its various parts perform are peculiar to it.

Mind, or psychological functions, as determined by

phenomena, are as follows:

1st. Instinctive; the functions of brain-matter whose peculiar forms of structure are provided for in our organic nature; transmitted from parent to offspring, more or less perfect, but extended and perfected by experience, as brought about by the necessities, exigencies, incidents, and accidents of life.

2d. Intellectual: the functions of "forms of organic structure," added to brain-matter, provided for in the or-

ganic nature of each individual (formless, so to speak, at birth), by educational processes, designed or accidental.

3d. Soul, or spirit, in an unknown organic union, and offering no point of physical investigation, but existing, in fact, in each individual, wholly independent of mental state—that is, that those of unsound mind, idiotic, or imbecile, have souls in common with those of the best intellectual conditions.

4th and last. That the so-called heart phenomena belong in the mixed domain of instinct and intellect; but are essentially instinctive, but readily enlarged and strengthened by experience, and by educational processes.

It seems to me that, combining all the facts of observation and experimentation, and subjecting them to treatment by analysis, synthesis, and abstraction, the foregoing conclusions are all definitely made out; though the "forms of organic structure" upon which instinctive, intellectual, and spiritual phenomena depend, are not now capable of physical demonstration to the naked or microscopically aided eve.

And, at last, the conclusion is reached, that nothing is, or can be, known of either body, mind, or soul, only through a structural basis of matter. And that the recognition of these things is, in like manner, by organic forms of structure. And, lastly, that of the spiritual, though existing beyond a doubt, no structural basis of material may hope, in our day, to comprehend it, only as we are taught by Revelation.

Michigan State Board of Health.

BY HENRY B. BAKER, M. D., SECRETARY OF THE STATE BOARD OF HEALTH OF MICHIGAN.

The regular annual meeting of this Board was held at Lansing, April 9, 1878, the following members being present: Dr. R. C. Kedzie, President; Hon. Leroy Parker, Rev. D. C. Jacokes, and Henry B. Baker, Secretary.

It being the annual meeting, President Kedzie presented his annual address, entitled "The Work of the State Board of Health;" in which he gave an account of the past work of the Board and outlined its work for the immediate future.

Among the many duties which the Board had performed since its organization, about the first effort was for the establishment of well-organized and effective boards of health in every township, city and village throughout the State, securing the appointment of a health officer by every board of health, and then bringing the State Board of Health into communication and active co-operation with all these local boards of health, thus gaining two important objects-(1) having an effective channel for imparting information; (2) having organized bodies through which the statistics in regard to public health could be gathered from all parts of the State. Besides this, the Board had secured the assistance of many physicians throughout the State, receiving from them many valuable reports, communications and replies to circulars regarding the cause and progress of various diseases. He referred to the general plan of work within the Board by distributing the duties to regular committees on different subjects, and claimed that every State Board of Health. subsequently organized, had approved of the plan by

adopting it.

In speaking of the efforts to impart information and gather statistics bearing on the public health, he said the results were most gratifying. Not only sanitarians, but the people at large, are grasping that very important and revolutionary idea, the possibility of the prevention of disease and death; that many diseases may be prevented altogether, or that when they do appear they may as certainly be stamped out as a forest fire may be extinguished, or they may be walled in as an inundation. A people who fully grasp the idea that half of their sickness and death may be avoided, as truly and really as they may prevent the destruction of their crops by cattle by proper fencing, have taken a long stride in state medicine. This fact ought not to be lost sight of, that each person is in the broadest and fullest sense healthy and safe only as every person about him is healthy and safe. In outlining the future work of the Board the doctor said that the law now says that the Board shall from time to time recommend standard works on hygiene to be used as textbooks in our common schools. He recommended that this subject be referred to a committee to report to the Board at an early day, either by recommending standard works on hygiene, or by showing that no proper books have yet been written. He recommended the early publication of the material collected by the Board, such as meteorological data and reports of diseases, etc.

VITAL STATISTICS.

He recognized the fact that public health measures have their foundation on vital statistics, and it becomes therefore a matter of necessity as well as of law that we should study these records in order to promote the health and safety of the people. The first and indispensable quality of statistics is accuracy. He recommended that the committee on legislation and the Secretary of the Board be appointed a committee to prepare a bill which shall embody some changes which seem to be required in the law and bring the subject before the next legislature.

DISINFECTION.

Inasmuch as the methods for disinfection are similar for different diseases, he recommended that a general circular on the use of disinfectants be prepared and issued, so that whenever the Board wishes to issue instructions for the prevention of any self-propagating disease, such a circular will save repetitions.

PRESERVATION AND PREPARATION OF FOOD.

In his opinion the question of food and its preparation for human use has more vital relations to the public health and welfare than all other physical causes combined. If our people can be taught to preserve and prepare their food so as to secure the best dietetic results, preventive medicine will have won a grand victory. It could then no longer be said that "our appropriate monument would be a frying-pan and our epitaph saleratus."

SANITARY SURVEY OF THE STATE.

He suggested that this work should be done early in order to prevent the destruction of property in mills, etc., which may depend on dams which cause the overflow of surrounding country. The subject of the pollution of streams by sewage is a question of great importance and one that should be settled before sewer systems become practically beyond control on account of the large outlay of money to effect a change. When Detroit

first emptied its sewage into the river it was claimed that it was not possible to pollute such a mass of water, but since the country has become thickly settled above, the water supply of Detroit is already endangered, and fears are expressed that as the population above Detroit along the river becomes greatly increased the water of Detroit River will become unfit for domestic use. He referred to other cities and remarked that a similar trouble may yet vex the people of Lansing.

Such evils can only be averted by early combined effort. A sanitary survey will cost money, but nothing is so economical as health, and nothing so wasteful as sickness. A true economy will freely expend money to secure

health.

SANITARY CONVENTIONS.

He suggested the holding of sanitary conventions in different parts of the State to discuss sanitary subjects, and to bring together dealers in sanitary appliances, sanitary experts, and the people generally who need instruction in sanitary work. He hoped to see the day when these questions which lay hold on life shall be as freely discussed by the laity as they now are by experts in sanitary science. If such conventions were held the secular press would distribute widely the truths brought out. The State Board of Health needs recruits to win victories in sanitary science in every hamlet in the State, but no recruits from other quarters can equal in widespread influence the secular press. In carrying out any sanitary reform, we need and must have the aid of the women of our State, for "woman makes the home." The work of sanitary conventions must be confined to sanitary subjects. All questions of party politics, denominational theology, and of curative medicine, must be rigidly excluded.

In closing, he stated that the office of the Board is not to convulse the community with lightning shock, but to let in the sunlight of truth, which, silent as the footfalls of time, but resistless as destiny, shall mold and fashion the very conditions of life in our State.

The recommendations made by the President were separately considered, and committees appointed to carry

them into effect.

DRAINAGE LAWS.

Leroy Parker reported on the drainage of lands in adjoining townships, and suggested that the law might be so amended as to provide for an appeal to the circuit court in case of dispute. Dr. Baker suggested that on questions of drainage to preserve the public health the local health authorities should have the deciding power. Mr. Parker was asked to further consider the subject with a view to an effort for an amendment of the law.

WOODEN SIDEWALKS, ETC.

Dr. Hitchcock sent a report on decaying wooden sidewalks, pavements, etc., which was read by the Secretary. It embodies replies from the regular correspondents of the Board in various parts of the State. The general idea seemed to be that no sickness had been traced directly to these causes except in two instances. The substance of these reports will be published in the annual report.

CITY AND VILLAGE HEALTH BOARDS.

Leroy Parker reported the draft of a bill designed to secure reports of communicable diseases of citizens of cities and villages to the local boards of health as is now required by law in townships. He was requested to act for the Board in bringing the subject to the attention of the next legislature.

TOMATOES AND CANCER.

Dr. Hitchcock made a report on this subject, which had been referred to him at a previous meeting. He based his conclusions on replies of correspondents of the Board throughout the State. There seemed to be no evidence showing that tomatoes cause cancer; and the source of the notion was traced to a quack professor in an institution that sold diplomas in Philadelphia, who claimed to have found cancer cells in the tomato.

Dr. Kedzie reported an analysis of water received from Climax, where cases of sickness had resulted from its use. The water was loaded with organic matter. This was probably due to slops thrown near the well.

REPORT OF THE SECRETARY.

Dr. Baker made a report of the work done in the office during the quarter just ended. Blanks and circulars of instruction for annual reports of health officers and clerks

of local boards of health had been sent out, and 1,189 documents of this kind had been received, examined, and filed. A circular to correspondents asking thirty-four questions in regard to diseases during the year 1877 had been planned and sent to all correspondents of the Board. and thirty-two replies had been received. A circular to supervisors and other officers of townships relative to notices of communicable diseases had been prepared. approved, 20,000 copies printed, and about 4,000 copies distributed. Posters on the same subject had been sent to every township in the State, with a request that they be put up in a conspicuous place. A circular and blank return for name and post-office address of health officers had been prepared and sent to every supervisor in the State. A similar circular was also sent to the mayor and president of every city and village in the State.

The regular quarterly distribution of postal blanks for weekly reports of diseases had been made; and also record-books sent out for the use of observers who make the reports of diseases. In order to make this distribution, 1,800 postal blanks were printed, and 300 blank books printed and bound. Such weekly reports for the year ending with September, 1877, have been compiled and are ready to be printed. Letters on diphtheria from thirty-nine correspondents, and on scarlet fever from thirty-one correspondents, have been edited for publication in the annual report. Editorial work has also been done on vital statistics of Michigan; also on the replies to the circular on prevailing diseases in 1876. A compilation of meteorological data for 1877 has been made.

Communications were received from Dr. Worsfold, of Jackson, in relation to preventing deaths at railroad stations from catching feet in "frogs;" from Dr. Beech, of Coldwater, concerning the filthy condition of privies at railroad stations; from Dr. Rouse on deaths in Detroit; and from Dr. Chase, of Otsego, on opium-eating.

The committee on legislation was instructed to secure an amendment to the law in reference to vaccination in

townships, villages and cities.

Dr. Kedzie was asked to attend the meeting of the American Social Science Association at Cincinnati, May 18 to 24; and Dr. Baker was asked to attend the coming meeting of the American Public Health Association.

Bills were audited to the amount of \$1,323.74.

SELECTIONS.

Diseases of the Nervous System.

A LECTURE DELIVERED AT BELLEVUE HOSPITAL MEDICAL COLLEGE, DECEMBER 15, 1877.

BY C. E. BROWN-SEQUARD, M. D.

[Reported for the "Medical Record."]

GENTLEMEN: When interrupted yesterday, as you remember, I was speaking of loss of consciousness as an effect of peculiar change in the circulation of the brain. As then stated, I proposed long ago to explain the loss of consciousness which exists in attacks of epilepsy, by the production of the contraction of blood-vessels in the cerebral lobes. Indeed, contraction does take place; it is part of the convulsions which occur in attacks of epilepsy. The same thing takes place in the blood-vessels—for instance, in the face, and the face becomes pale. There is no doubt that such fact exists in the beginning of almost all attacks of epilepsy. Although theoretically the organ of consciousness is situated in the cerebral lobes-although it is clearly because of the cessation of the circulation in the cerebral lobes that cessation of cerebral activity exists, it is also certain that it is not simply on account of that cessation of circulation in the cerebral lobes that loss of consciousness occurs. This can be proved in the following manner: in the first place, if we galvanize both sympathetic nerves in the neck, thereby producing the greatest contraction that can take place, thus completely excluding blood from the small arteries which enter the convolutions of the brain, we do not find that such contraction is alone sufficient to produce loss of consciousness. Disorder of mental activity is produced in the animal upon which we operate, but there is no complete loss of consciousness by any means.

In the second place, if we cut the four large vessels which go to the brain, so as to arrest the circulation there at once, the loss of consciousness which appears is not

immediate.

In a large proportion of the attacks of epilepsy, loss of consciousness is immediate. In some individuals there is

no time which can be appreciated between the aura and the attack.

So the loss of consciousness takes place before the time when cessation of circulation, if that were the cause, would have produced its effect. We can not, therefore, look upon cessation of circulation in the brain as the cause of loss of consciousness.

CESSATION OF CIRCULATION AND LOSS OF FUNCTION.

Besides, I should call your attention—especially the attention of those who are making new investigations—to the fact that it is not at all certain that the view we all entertain is correct—namely, that loss of function quickly follows the cessation of circulation in any organ, but especially in the brain. There are facts, indeed, which seem to show that that view may be wrong. In cholera, for instance, the circulation which takes place in the brain is, indeed, almost nothing; the blood after death is exceedingly black, and, not unfrequently, it is found coagulated; it does not contain any marked amount of oxygen; yet a brain so badly nourished may retain its

activity for several days.

There are choleraic patients who have this lack of proper circulation in the brain without manifest elimination of mental power. I know that this phenomenon can be explained otherwise than by admitting that a certain degree of nutrition is necessary for the activity of the various tissues of the body. It can be stated that during cholera there is some poison in the blood which acts as nutriment to the brain, but that view is so absurd and unacceptable that I simply speak of it as one of the ways by which we can explain that the brain can go on acting without being nourished by the ordinary elements which are in the blood, and which give power to the tissues. It is perfectly well known that if we bleed a man or one of the lower animals to death by cutting the head off, death takes place not simply because there is no more respiration, but because the brain is entirely emptied of blood. In that case, as well as in the case in which we cut the four vessels, there is certainly no circulation in the brain, and we all admit that it is due to lack of blood that the brain ceases to act. It is doubtful, however, if that view is correct. If we pay attention to certain circumstances, we can not but admit that the causes,

whatever they are, which produce cessation of circulation in the brain, also at the same time produce a peculiar irritation which stops the activity of the brain, just as a prick in the medulla oblongata can stop the activity of

the brain without changing the circulation.

Galvanization of the par vagum produces a peculiar action upon certain brain-cells, and arrests their activity. In view of this fact, you can easily understand that in cases of cholera, although the circulation is altered greatly, it is not accompanied by an agent which gives rise to an irritation that produces arrest of activity; while if you cut the large vessels, a rapid change is produced in certain localities in the brain, and some agent is developed which acts as an irritant and arrests the activity of the brain-cells.

I have brought this point forward to show that a broad field yet exists for investigation, not only with reference to it alone, but to many others.

MUSCULAR IRRITABILITY AFFECTED BY REST.

Thus, for instance, we all admit that muscular irritability will go on diminishing from mere rest, mere lack of use. Certainly there are many cases in which we find muscular waste when they are not used, and this wasting may be due to some other influence than mere rest; there is an irritation also in most of these cases which can change nutrition. In certain cases of hysteria, muscular irritability is scarcely changed in patients who are completely paralyzed. Once I saw a young lady whose right arm was absolutely deprived of voluntary movement, and yet the muscles of the arm were perfectly well nourished, and responded as readily to galvanization as those of the unaffected arm. In that case there had been absolute rest, except during sleep, when there may have been some unobserved movements—at least almost complete rest for two years; so that rest is not in itself sufficient cause for the production of muscular waste. Wasting comes from changes in nutrition produced by irritation. From this cause the wasting of muscles associated with some diseases of the spinal cord is so rapid that they may be reduced to one half their original size within the short period of a single week. Rapid change of that kind is exceedingly rare, however; yet in brain disease, if the muscles waste away, you may be sure that there is considerable irritation in the brain or secondary influence upon the spinal cord produced by disease in the brain.

LOSS OF CONSCIOUSNESS.

Now, returning to loss of consciousness, I will say that, in attacks of epilepsy as well as in syncope, lack of cell-activity in those cases is due to the effect produced by poisons, such as is produced by morphine or any other narcotic remedy when rapid cessation of activity of the brain is produced; that is, arrest of activity in brain-cells is produced by disease in the same manner as it is produced by any of the narcotic poisons. It is by inhibitory influence that the activity of the cells is arrested, and this inhibition may be permanent or not, according to circumstances.

EPILEPTIC AURA—IMPORTANCE OF ITS ARREST—MEANS FOR PREVENTING ATTACKS OF EPILEPSY.

I pass now to another point. I said yesterday that there is very frequently an aura in disease of the brain causing convulsions. It is very important indeed to examine with reference to this point; for if you find an aura, it will lead to the use of a series of means which may stop an attack of epilepsy. If an attack of epilepsy can be arrested, we do more than simply arrest that attack; for, during an attack of epilepsy, changes occur which prepare the brain for future attacks; so, if one attack can be arrested, you may perhaps stop a generation of attacks. It is important, therefore, to prevent an attack of epilepsy. Now, with reference to the means of preventing these attacks. Means for preventing the occurrence of attacks of epilepsy were resorted to centuries and centuries ago. Galen insisted particularly upon the importance of ligaturing the limbs for this purpose. Suppose, for instance, there is an aura starting from the finger-a peculiar sensation or muscular spasm—Galen, and a great many physicians since his day, and even in our own times, insisted upon the application of a ligature to the arm, with the view of preventing the passage of some influence from the extremity to the brain. In reality, we succeed very frequently, by the application of a ligature to the extremity, when the aura is there, in arresting an epileptic attack; but it is not because we prevent something from going to the brain, but it is because we send something

to the brain, and that something is an irritation which acts so as to arrest the irritation already there, and which, if undisturbed, would produce the convulsion. It is the same as that which occurs in diseases of the spinal cord, in which, by taking hold of the big toe, you arrest completely, in most cases at least, convulsions occurring in the lower limbs. For example, in cases of spinal epilepsy, the convulsions may be most violent, may last all day, and may recur upon the least touch of any part of the skin of the lower extremities; in those cases it is not rare at all, especially in certain forms of the disease, that drawing upon the big toe brings about a relaxation of the muscles and ends the convulsions. An arrest of the morbid activity in the cells in the spinal cord is produced by irritation of the nerves which go to the big toe, and that arrest remains sometimes for hours, and sometimes for days; but you can reproduce the same phenomena in the same patient. Whenever the convulsions exist, you can witness the influence exerted by this irritation.

As soon as I was possessed of the idea that it was through irritation exerted by the ligation, that an attack of epilepsy was cut short, I tried and found that other irritants applied to the skin produced the same effect; for example, such as extreme cold, great heat, pinching the part; in short, any irritation of the nerves in the region where the aura commences may be sufficient to arrest an attack. In fact, the patients themselves, if they have strength of will sufficient, when upon the point of having an epileptic seizure, can, by moving the limb rapidly, rotating the arm, etc., perhaps stop an attack. Any kind of irritation from the periphery may act upon the brain and arrest the morbid activity of the cells, and that irritation can succeed even when applied upon the other side

where the aura exists.

As regards other forms, if the aura starts from the stomach, anything which irritates the stomach powerfully, as a violent emetic, will save the patient from an attack of epilepsy. Certain other means may also succeed, as acting upon the bowels by an enema that will produce a rapid and considerable action of the muscles. Pressure upon the bowels may bring about the same result, if the sensation starts from that region. A galvanic shock, on the contrary, will produce an attack in many cases. If the patient has simply a vague sensation of dis-

turbance without any distinct place from which the aura arises, any means of producing irritation of the skin behind the ears, or between the shoulder-blades, may be of some service; such as the application of ice, a sharp blow from the hand, galvanic shock, etc. Any medicine which acts with great power either upon the stomach or upon the bowels, or which acts with great power upon the nervous system, may be of service in these cases.

MEDICINAL AGENT FOR THE ARREST OF ATTACKS OF EPILEPSY.

A common remedy which is employed with some benefit consists of three or four grains of the sesqui-carbonate of ammonia in a drachm or half-ounce of tincture of columbo, or gentian, or rhubarb; it is the alcohol chiefly that acts. Taken without dilution, it is rather strong, and therefore a trifling quantity of water may be added. It should be carried in the pocket, so that it can be used at the shortest warning. Running, jumping, anything and everything that produces a change in the circulation and respiration, may be of service for the arrest of an attack of epilepsy. You may not know what means will operate best upon a patient; but, recommending such means as have been mentioned, he may try one after another until he finds that which succeeds best in his individual case. In that manner, you can, perhaps, save the patient from an attack.

COMBINATION OF THREE MEDICINES.

The combination of three medicines I have found has considerable more power in controlling epilepsy than the use of one alone or of two combined. If you employ the bromide of potassium, you must employ with it the bromide of ammonium and the iodide of potassium or ammonia. A combination of these three salts acts with far greater power than when either one is used alone. It is essential always to add the bromide of ammonium if the other bromides are employed. In these cases it is also essential to employ some means of counter-irritation at the base of the brain; or, in cases of distinct aura, some means of counter-irritation at the place where the aura starts. In those cases in which the aura starts in the finger, I have succeeded most wonderfully in controlling the attack by the application of a circular blister in the shape of a ligature to the finger itself. There is, therefore, a series of means which can prove successful in preventing attacks in these cases. As I said yesterday, if we can do so much in the way of controlling attacks of epilepsy, why should we not be able to do the same against paralysis, as epilepsy and paralysis are in many respects alike in their mode of production?

PARALYSIS AND CONVULSIONS.

Before speaking further of means of treatment, which may be of immense importance if modified successfully, I will say a little more with reference to the doctrine regarding the production of paralysis and epilepsy, and also of what I have to substitute for the generally admitted theories.

As you well know, the facts mentioned in these lectures seem to be quite in opposition to the views held by most physicians, if not by all. When paralysis exists, for instance, in the right arm, and we find convolutions upon the right side of the brain destroyed, it is admitted that the center of the will-power for the right arm has been destroyed, and that it is very natural, therefore, that the right arm should be paralyzed. In the same manner, if we excite the convolutions of the brain, or any part of the voluntary motor apparatus—such, for instance as rises from slight inflammation at the surface of the brain—and the patient is attacked with convulsions, it is quite natural, according to the theory generally admitted, to look upon the irritation there as having produced such convulsive movements—as having put into play the motor activity of the part where the disease exists. These two illustrative instances—the paralysis on the one hand, and on the other the convulsions—are apparently in perfect harmony with what is supposed to be established. But, as I have said many times, we find the same thing taking place, not only on the opposite side, but upon the side corresponding with the seat of the disease. Certainly the theory can not apply in these cases. Besides, we find the same thing occurring when the disease is in parts of the brain which are not able to produce the least movements when irritated by galvanism, and which we know, and we all agree, do not belong to the voluntary motor apparatus. For instance, disease in the posterior lobe of the brain, according to the theory admitted, should never produce paralysis or convulsions; but disease there often produces both convulsions and paralysis. We have then something tak-

ing place, and occurring very frequently, which is the reverse of what is generally admitted. What are the explanations given by physicians and physiologists of the fact which seem to be decidedly against their views? The explanations, I must say, have been very few and very timid; and, indeed, I think that I have myself, in fighting against the admitted theory, put forward these explanations very strongly. I believe that what I shall now say can at least certainly explain some of these cases. For instance, in a case of paralysis and convulsions upon one side of the body, we make an autopsy and find disease in the posterior lobe of the brain upon the opposite side. We know that disease exists at that point—we are absolutely certain of it; but, it is said, what evidence is there that there is no disease elsewhere? There may be undetected disease in the part belonging to the voluntary motor apparatus, when the brain is examined in the limited manner necessary at an autopsy; there may be disease in some other part of the brain which can not be recognized by the naked eve; so we can not be certain that disease does not exist, unless further examination is made.

There are many cases which at once answer this objection. If we find, for instance, that a patient is stricken with symptoms of hemorrhage in the brain; he has all those symptoms which are manifested when hemorrhage in the brain occurs, and yet had no manifestation whatever of brain disorder previous to the attack, which comes on suddenly. Besides the symptoms belonging to hemorrhage in the brain, he has paralysis in the right arm, convulsions in the right arm and face, and he dies within a few hours, as he may when the hemorrhage is limited. An autopsy is made, and we find hemorrhage has taken place into the posterior lobe. Can we admit that there was disease elsewhere? What kind of disease could have been produced so rapidly? What kind of disease could have produced such paralysis as we find in the arm, occurring just at the time the symptoms of hemorrhage occur?

It is quite certain that in such cases we can not say that paralysis and convulsions depended upon something else than the disease we see. Why should not the same thing be true when the paralysis and convulsions are upon the corresponding side of the body? A great many cases besides hemorrhage will show the same thing. Embolism

and softening may produce the same result. For instance, embolism occurs, and we have nothing except the fact that there is a plug in a blood-vessel, and the congestion and softening which surrounds the part. If that lesion exists in a part which does not belong to the voluntary motor appartus, we must admit that the paralysis, as well as the convulsions, is due to the disease seen, and not to the disease imagined and which we do not see.

Other explanations and answers to these might be given;

but, as time presses, I will not indulge in them.

There is another source of explanation which is very good indeed. For instance, in those cases in which disease has destroyed the greater part of the voluntary motor apparatus in the region where it is located, and there is neither paralysis nor convulsions. How is the absence of paralysis and convulsions to be explained? It might be said—I do not say that it has been said—that paralysis does not appear because only a part of the voluntary motor apparatus has been destroyed. That may be, and that is the case sometimes when there is slight disease; but why is it that there is neither paralysis nor convulsions when a considerable part of the voluntary motor fibers are destroyed? Then it might be said, that though apparently diseased, yet the tissue remained able to act. This explanation is certainly very good, and may be true, but there is no proof of its truth. In those cases, for instance, in which there is softening following embolism, it may be that the nervous tissue remains active, although it has undergone considerable alteration.

The same may be true also in cases of tumors pressing upon different parts of the brain; there may be simple atrophy of brain-tissue, but no loss of function, however altered the structure may be. Certainly, this is a passable explanation for a number of cases. It is quite certain that nerve-fibers, for instance, have one essential element—the axis cylinder—and it may be that that part remains active, although there is considerable pressure upon it. But admit that this is true; what then of those cases in which the tissue has been so destroyed that there was no normal tissue left, and if the cylinder axis remained visible it had no cells which were not considerably altered? There are such cases, perhaps forty or fifty, in which disease has struck parts at the base of the brain; many more

in which the convolutions were involved, and no tissue

left which was unaffected.

There are then two series of cases: those in which the brain-tissue is completely altered, and those in which tissue is missing. There has been, however, no marked paralysis in a number of those cases, and there have been also no convulsions. It is clear, therefore, that there are a great many facts which can not be explained by, and which are in absolute and direct opposition to, the views generally admitted.

THE THEORY BROUGHT FORWARD AS A SUBSTITUTE FOR THAT GENERALLY ADMITTED REGARDING THE PRODUCTION OF PARALYSIS AND CONVULSIONS.

What then is the theory which we are to substitute for that generally admitted with reference to production of

paralysis and convulsions?

I have many times said that paralysis and convulsions appear through the same mechanism, however different one symptom is from the other. If you admit, as I do, that the cells in the gray matter of the brain are endowed with the same function, the explanation of the production of paralysis and convulsions is very plain. For instance, the cells which are employed in moving the right arm are scattered in the brain, as well as are the cells which serve for any special function of the brain. These cells being so scattered, and belonging to one function, are connected one with the other by fibers, so that they may act with harmony.

Suppose that, the cells being so distributed, an irritation comes from the bowels; it is transmitted to certain parts, and instead of going to certain other parts, it meets, in the part to which the irritation is transmitted, cells which are then employed in the production of voluntary movements, or those which are able to produce movements by reflex action. These are two distinct kinds of cells, as many facts show. If that irritation reaches cells which are employed in producing voluntary motor action of the arm, for instance, it produces the same effect as does irritation by galvanism of the nerve going to the arm at any point at which it can be reached in the neck—the cells are stopped in their action, their activity is suppressed, and paralysis occurs.

If, on the contrary, an irritation, starting from the bow-

els, acts upon those cells which are able to produce reflex movements—whether these cells are situated in the base of the brain or elsewhere—those cells are put into play and convulsions occur; that is, reflex movements of a convulsive character.

What takes place when irritation starts from the bowels is the same as that which occurs when disease in the brain exists. An irritation starts from the posterior lobes, for instance; it spreads into the brain, and in those cells, wherever they are, which serve for voluntary motor movements, are acted upon, they are exhibited in their power to produce motion, and there is paralysis as the ultimate result of the irritation. If, on the other hand, the irritation starts from the same place and reaches cells which are connected with the production of reflex movements, convulsions will appear. In both instances we have the same elements; there is an irritation starting from some place, and traveling to some cells, and there either inhibits their activity or produces reflex movements-produces either paralysis or convulsions. The irritation may inhibit the action of the cells which serve in the expression of ideas in speech, and give rise to aphasia.

I have not time to dwell further upon the opinions which I hold, in order that you may understand them better; but I will say that paralysis or aphasia, or loss of function in any part of the brain, can occur by attacks as well as convulsive movements can occur in attacks.

You can now easily understand how an irritation operates to produce attacks of paralysis, aphasia, amaurosis, etc., and it can be easily seen that when the paralysis persists there is also something of the same kind of action. The objection to this would be: How is it such power can be kept absolutely inactive for so long a time as it exists in paralysis which is persistent? We know already that, in many cases of paralysis produced by organic disease of the brain, there has been sudden change for the better; and there are cases in which rapid cure has occurred, although the organic cause which has produced the paralysis has persisted. In fact, fluctuations in the loss of function in any part of the brain are frequently observed, and these fluctuations may go on to such an extent that the patient may be cured very rapidly, and in certain cases very suddenly. If there was paralysis or loss of function because of the existence of the organic disease, the lesion

persisting, the effect would persist. But it is not so. It must be that something exists which ceases to exist at

the place where the effect is produced.

We know that in animals we can arrest the activity of those cells which serve for the production of sight, and the activity of cells serving to all the mental faculties and the will. The activity of the cells employed in any of the functions of the brain can be suddenly arrested by certain irritations. In cases, for instance, of hemorrhage into the upper part of the spinal cord, without possible pressure upon the brain, there may be immediate loss of consciousness. There are two such cases upon record. Certainly there was loss of activity of all the functions of the brain as regards power of motion and sensation, all will-power, and that from an irritation which started at a distance from the brain. Certainly, also, there was no pressure upon the brain in these cases. In these cases, also, consciousness was restored after a time.

Sometimes we produce death rapidly, and destroy, there-

fore, all the activity of the brain by a mere prick.

We can also produce a persistent amaurosis by a mere prick of the restiform bodies, and the amaurosis appears instantaneous. There is no direct connection between these bodies and the eye, yet the amaurosis persists while the animal lives; and I have had an animal that lived more than two years after the production of such a disorder of vision.

All will-power and all sensibility also may be destroyed by a mere prick in certain parts. If, for instance, the spinal cord in animals be pricked in the dorsal region, it is found that sometimes there is produced a cessation of the activity of cells there, and we have anæsthesia upon the opposite side and loss of will-power upon the corresponding side.

We find in cases of disease of the brain that the pulse is weakened and is exceedingly irregular as long as the patient lives; it is an arrest of the action of the heart while the disease exists in the brain. If the action of the walls of the heart can be so modified, and persistently modified for months and months, the same thing may exist for different parts of the brain.

In the same manner, reflex activity may be arrested for months and months, as, for instance, the cell activity which controls the contraction of the sphincters of the bladder and rectum, and the loss of control over the action of these parts may be permanent. The same thing may take place for the cells which control voluntary movements.

CONCLUSION REGARDING TREATMENT OF PARALYSIS AND CONVUL-SIONS.

From what has been said, what are the conclusions reached regarding treatment? Upon this subject I have time to say only a few words. The leading principle is that you are to obviate the effects produced by disease in the brain by means of irritation upon the skin in the parts which are affected. Suppose the arm to be paralyzed, then the irritation is to be applied so as to restore the activity of those cells which serve for voluntary movements of that part. The same means which have been suggested as those to be applied against an aura are to be applied against paralysis.

New York Academy of Medicine.

THE DIAGNOSIS AND TREATMENT OF DIPHTHERIA.

A REGULAR meeting of the Section was held at the rooms of the Academy, 12 West 31st Street, on Tuesday evening, March 19th, when the Chair announced the subject for discussion as above. It had been expected that Dr. T. H. White would read a paper on diphtheria; but, unfortunately, he had not had the time to prepare it, nor was

he able to be present to state his views.

Dr. Alexander Hadden was the first speaker. In order to open the discussion, he said he would ask a question, viz: Is diphtheria a disease per se, or is it an affection which is superinduced upon a previously inflamed condition of the mucous membrane of the throat or other parts? From the tone of a number of papers that have of late appeared in the medical journals, he would be led to infer that it was to be regarded merely as a local condition which may supervene upon any inflamed surface, and which would bear much the same relation to that part that erysipelas or gangrene would to an ordinary wound. These papers, he went on to say (and he mentioned those of Drs. Jacobi and Billington particularly), leave us somewhat in doubt in regard to the matter. At

first they seem to speak of diphtheria as a distinct disease, but afterward to regard it largely as merely a condition, and local in its manipulations. As for himself, he would be inclined to believe that it is a disease in itself. The principal grounds for that opinion were found in the fact that though the local symptoms might be of a very trivial character, the affection might still be attended or followed by the most serious troubles, such as violent nephritis, enlarged liver or spleen, paralysis, etc., as he himself had not infrequently observed. He thought that the mere local lesions were quite insufficient to account for the after-symptoms, and he had never heard of a case of simple or follicular tonsillitis being followed by paralysis. Yet he had seen the most extensive paralysis result from very slight cases of diphtheria, and he had also observed the same phenomena in children who had no pseudo-membranous exudations whatever upon any portion of the mucous membrane (as far as could be observed, or even suspected), but who belonged to families some other members of which exhibited the ordinary symptoms of diphtheria. He mentioned a case in point, that of a child three years of age. Nephritis, too, was very common, even where the local lesions were not at all well marked.

There was another class of cases, on the other hand, in which the local symptoms were of the most violent character, and accompanied by a very high degree of temperature. In these gangrene frequently set in, and death occurred very rapidly—sometimes in forty-eight or fifty hours from the commencement of the attack. In these he could easily understand how a septicæmic condition had been caused; for death could not be attributed either to asphyxia or to interference with the cerebral circulation, the lesions being usually confined principally to one side of the throat, and, therefore, not offering sufficient obstruction to prevent venous return from the brain.

Dr. J. Lewis Smith said that, as regards grave constitutional symptoms in connection with very slight local lesions, he could recall two striking cases in which there was scarcely any pseudo-membrane in the fauces, and no catarrhal symptoms sufficient to account for any deposit at all upon the Schneiderian membrane, and yet in which, at the same time, the most violent nephritis was going on. One of the children barely escaped with his life, and the

other one died from total suppression of urine. In his experience he had found that it was exceedingly common

for diphtheria to attack the kidneys.

As regards the character of the affection, he thought that all the best authorities now admitted that there were two distinct forms of it, viz: the idiopathic and the secondary. The latter might occur whenever there was any inflammatory condition of the mucous membranes, and not infrequently supervened upon scarlatina, pertussis, and typhoid fever. If the disease occurred in the idiopathic forms, its local manifestations would also perfectly show themselves whenever there happened to be any irritated or inflamed surface at the time, as, for instance, from bronchial catarrh, or the action of a blister.

Dr. Ward stated, in this connection, that during the late war, when scurvy broke out in the army before Port Hudson, he not infrequently noticed the appearance of diphtheritic patches upon the surfaces of scorbutic sores. In some cases the throat was affected, and in others entirely free from any diphtheritic appearances. Typhoid fever

was also prevailing in the camp at the time.

Dr. Smith then went on to speak of the treatment of diphtheria, which, he said, must ever be a subject of the greatest interest and importance to practitioners, and especially at this time, when, as far as he could judge from the recent increase of cases in his part of the city, another epidemic of the disease seemed commencing. In the first place, he wished to state distinctly that he did not believe that we had any specific for diphtheria, in the sense that quinine is a specific for malaria, though a number of so-called specifics had been from time to time urged upon the attention of the profession. Among these might be mentioned bromine, cubebs, the sulpho-carbolate of soda, and, more recently, alcohol, as advocated by Dr. Chapman, of Brooklyn, in a paper read before the Kings County Medical Society. In a letter which Dr. Smith had just received from Dr. C., he stated that he believed alcohol was as much a specific for diphtheria as quinine is for intermittent. If called in during the first day or two of the attack, he thought he could save every case by the administration of alcohol in intoxicating doses. In the monograph which he read before the Kings County Society, he reported a series of cases treated in this way, in which there was but one death out of sixty-five, and in

a series of cases observed subsequently, but one death out of forty. Dr. Smith thought that we were hardly justified in calling any remedy a specific, for the reason that the agents which had been claimed as such, and all of which seemed to have produced such admirable results, were entirely dissimilar in nature, and acted in an entirely different manner. In the last two or three years, he said, we had some six or eight *specifics* offered us; but, of the whole number of remedies proposed, he was inclined to think that alcohol approached more nearly to a specific than any other which we have at our command at present.

Dr. Smith then made the statement that the more he saw of diphtheria the more he felt compelled to depart from Ertel's views that it is primarily a local, and only secondarily a constitutional affection. He could not but regard it as a general disease, the germs or contagium of which are transmitted to the patient by means of inspired air. He therefore thought it was just as useless to look for any specific (that is, any remedy that will absolutely cure it or abort it) as for scarlatina, measles, typhoid fever, or any other such idiopathic disease; and could see no reason why we should be more successful in finding one for this affection than for any of the others. If another epidemic were about to begin in this city, he intended to give Dr. Chapman's plan of treatment a thorough trial, because, with his present views upon the subject, it seemed to him to offer the best chance of good results. His method was to administer a teaspoonful of brandy every hour, or even every half-hour, to a child one or two years old. Under ordinary circumstances, of course, this would produce marked intoxication; but, on account of the depressing influence of the diphtheritic poison, he had found that children would tolerate an exceedingly large quantity of alcohol without any such effect being produced. Personally, he had employed the treatment in a number of cases during the past month, and he had had every reason to be greatly pleased with it. At the same time he would not give up such agents as iron and quinine; but he thought that we should now abandon all forms of local treatment which will cause irritation and an increased area of redness, for by their use, as has now been already demonstrated, we only increase the area of exudation. We should, therefore, employ only such local remedies as are not at all irritating to the mucous membrane. Disinfectants were particularly called for when there was a gangrenous state of the exudation, for the reason that the patient was constantly inhaling the deleterious gases which were given off by the sloughing membranes. He thought it utterly useless, however, to employ local measures for the purpose of aborting the disease, under the idea that it was at first merely of a local character; for he did not by any means believe that such was its nature.

Dr. Hadden stated that he frequently met in consultation gentlemen who believed that follicular tonsillitis, membranous croup, and what is more strictly regarded as true diphtheria, were all of the same character, and should all be treated by means of tonics and stimulants, and that he should like to have some information on the subject. In his experience, some cases of real diphtheria were well treated by means of alcohol; but what he considered as membranous croup was not well treated with alcohol.

Dr. Smith replied that he did not believe it possible at the present time, in this city, to make a differential diagnosis between membranous croup and diphtheria, on account of the comparative prevalence of the latter here. He regarded local measures (and particularly the steamatomizer) of the greatest possible importance whenever the larynx was invaded by the deposit of false membranes. He was of the opinion, however, that croup and diphtheria were two entirely distinct affections. During the period from 1804 to 1857, when diphtheria was entirely unknown in this city, there were cases of membranous croup con-

tinually occurring.

Dr. W. T. White mentioned that up to 1857 there was no such disease as diphtheria recognized in New York, and Dr. Smith thought that it was a strong argument for the difference of the two affections, because croup was observed constantly while there was no diphtheria whatever. He had recently conversed with a physician from Onondaga County, who told him that he saw, on an average, about three cases of membranous croup each year, but that there was no diphtheria at all in that region of country. In his great work, which appeared many years ago, when diphtheria was practically unknown, Rokitansky had distinctly stated that every mucous membrane was liable to croupous exudation, a statement that was based on the observations derived from thirty thousand

autopsies. At the present time, however, when a practitioner reports having seen more than four or five cases of membranous croup, it was certainly questionable

whether they were not really cases of diphtheria.

Dr. C. E. Billington thought it was a matter of great practical importance to clearly distinguish diphtheria from follicular tonsillitis, and one in which there was a good deal of confusion in the minds of some practitioners. In follicular tonsillitis the patches covered portions of the tonsils, but the margins differed from those in diphtheria, in which they are red and angry-looking. In follicular tonsillitis the patches disappeared very rapidly, leaving little excavations, which are characteristic of this affection and seen in no other. The rapidity with which they disappeared was so constant that in any doubtful case the diagnosis could be made perfectly clear by waiting a day or two, and in several instances he had resorted to this plan. To decide definitely upon the appearances in any given case often required a good deal of practice, and experience was the only safe guide in making such a diagnosis. When one has seen something of both affections. however, it was usually not at all difficult to distinguish the definite membranes of diphtheria from the creamy

and pulpaceous patches of follicular tonsillitis

Dr. E. D. Hudson, Jr., asked Dr. Smith if, when diphtheria was epidemic, the type of any ordinary sore throat was not liable to become changed into diphtheria; when the latter replied that follicular pharyngitis was not only more apt to become diphtheritic than simple pharyngitis, and not nearly so much so as the scarlatinal variety. He did not doubt, however, that almost any form of angina might become diphtheritic under certain circumstances. In regard to the differential diagnosis of diphtheria there were two affections liable to be mistaken for it, viz: follicular tonsillitis and the formation of a fungoid or vegetable growth upon the inflamed mucous membrane of the fauces. The latter was easily distinguishable, because this growth could easily be scraped off from the surface where it appeared. In follicular pharyngitis the white substance, as he had noticed it, appeared around the different follicles. If a patch were a quarter or half an inch in diameter, and penetrated the mucous membrane, he would be disposed to believe that it was a case of true diphtheria. So in ordinary croup, the exudation did not penetrate the mucous membrane, while, as had just been stated, this was always the case in diphtheria. There was also a line of demarkation. Still, in each affection the membranes were fibrinous, with epithelial cells between their meshes, and he did not believe it possible to make a differential diagnosis between them at the bed-side.

Dr. Hadden—"Then you would at once put the patient upon alcohol and other supporting treatment, whether you thought the case one of croup or one of diphtheria?"

Dr. Smith—"Undoubtedly, though I should also attend carefully to the local treatment (especially the use of

steam-inhalations) as of the very greatest service."

Dr. Billington said that it was now granted by the best authorities (whatever might be their theories as to the nature of diphtheria) that most of the cases of croup occurring at the present time are diphtheritic. He had seen cases of diphtheria in which the symptoms were very severe, and yet the amount of exudation apparently very slight; but in such cases he believed that there was always a good deal of membrane in such positions as to be invisible, as, for instance, upon the posterior surface of the tonsils and the soft palate. In several instances where he had suspected this to be the case, he had succeeded in washing out considerable quantities of membrane by thoroughly syringing the parts. He was in the habit of using copious injections of tepid salt water, which was not at all irritating to the surfaces.

The fact that diphtheritic exudation occurs in other affections, and supervenes upon wounds or ulcers, was suggestive to him that the contagium of the disease (whether chemical or organic in its nature) acted locally. It was well known that absorption was favored by a denudation of the epithelium, and it seemed to him that the point where the contagium was deposited was the local

origin of a constitutional disease.

Dr. Smith differed from Dr. Billington in this matter. He said that he understood that now, contrary to the former teaching, the best authorities held that, when a chancre made its appearance, the constitution was already affected with syphilis. So in vaccination, when the characteristic vesicle appeared, the system was under the influence of the vaccine poison, or ferment, or whatever it might be called. It could not be doubted that, in a cer-

tain proportion of cases at least, the diphtheritic poison was conveyed into the system by inhalation, and he was therefore of the opinion that, when the membranes appear in the throat, the general system is already affected.

Dr. Billington thought there was one point in which the analogy between small-pox, or vaccinia, and diphtheria, instituted by Dr. Smith, did not hold good, and that was this: in small-pox it was impossible to cut the disease short, while he believed this was possible in diphtheria by the appropriate use of local measures. He was confident that he had been able thus to shorten and actually cure a great many cases, though, of course, others might not agree with him in this; and he urged upon the profession the more careful recording of the grounds for diagnosis and the history of all cases of diphtheria.

Dr. Ward mentioned another point in which he thought Dr. Smith's analogy was defective. The having had syphilis or small-pox once was supposed to be protective against future attacks, but this was not the case with

diphtheria.

Dr. Smith replied that it was possible to have erysipelas twenty times, and yet it was a constitutional disease. Also, like diphtheria, it had no fixed period of duration. He had seen instances of scarlatina get well in three or four days, and sometimes in such cases he was on the point of reversing his opinion, under the idea that he had made a mistake in the affection, when the occurrence of one of the well-known sequelæ of this disease showed that the diagnosis had been correct.

After some remarks on the clinical history of diphtheria, Dr. Hadden gave a sketch of the plan of treatment which he is now in the habit of employing. If he saw the case early, he said, he usually produced free purgation by means of calomel, after which he relied simply on local measures. He had given up the employment of quinine entirely (until the patient had become convalescent) as he now regarded it as worse than useless. He had formerly employed alcohol freely, but as his patients frequently died while taking it, he had given that up also. His great reliance was upon keeping the affected parts thoroughly washed by means of a Davidson syringe, the injection which he usually employed being a mixture containing fifteen or twenty drops of bromine to the pint

of water. He also depended a good deal on the local application of persulphate of iron in glycerine (a halfdrachm or drachm to the ounce). If there was any phagedæna, he was in the habit of brushing the parts with Prof. Wm. H. Thomson's solution of bromine. Since adopting this plan of treatment, he was happy to say that he had met with highly satisfactory results in his diphtheria cases. He had had two recoveries from membranous laryngitis after tracheotomy, the second of the two cases being, apparently, an exceedingly unfavorable one. In this case he had injected iron and glycerine (of the strength of a drachm to the ounce) through the tube. He had used the application as freely in this manner as upon the tonsils, and it had the effect of dislodging the membrane, which had extended below the seat of the operation. In another case of tracheotomy performed the same day, in which no injections were made through

the tube, the patient died.

Dr. Hudson thought it possible that Dr. Hadden's apparent success in diphtheria, by the method which he had detailed, might really be due to the season. It was well known that, during the last year or so, diphtheria had not been nearly so fatal in this city as for three or four years previously. Dr. Thomson at one time met with quite a long series of uninterrupted successes with his bromine treatment; but suddenly he lost three or four cases almost at once, notwithstanding its employment. He was in favor of employing both local and constitutional remedies, and thought the practitioner who neglected either class laid himself open to criticism. Among the former he included all the various disinfectants which have been found of service. He was also inclined to think that in some instances the disease might be aborted, and then related a case by way of illustration. It was that of an adult living on Seventh Avenue, who had a violent chill and marked constitutional disturbance, and the excessive engorgement of whose throat led him to expect a case of diphtheria of the most serious character. Under the use of heroic and often repeated doses of quinine, however, and the constant application of the cold spray to the fauces, all the symptoms, both local and general, gradually subsided.

Dr. Randall stated that he was the family physician in attendance upon the cases which had been alluded to as

having died under the care of Dr. Thomson. There were eight children in the family, and they all had diphtheria. In the first of the cases the exudation extended to the larynx, and the child died from suffocation. In the second case the disease was of a much more violent type, and Dr. W. T. White was called in consultation. The treatment consisted of chlorate of potassium, glycerine, and carbolic acid. Under its use the exudation seemed to break down in flakes; but it afterward reappeared in the larynx, and the child died. The fourth case was the most violent of all. On returning from school one day the child had a chill, which was followed by high fever; the temperature running up to 104 or 105 degrees. In twelve or fourteen hours the fever suddenly abated, but the child lived only thirty-six hours after the commencement of the attack. An enormous slough had formed within twentyfour hours from the initial chill. Six of the eight children died: two from asphyxia (on account of the exudation in the larynx), and four from exhaustion. Three of them had died when Dr. Thomson was called in consultation. He proposed an entire change in the treatment, and, in accordance with his advice, all the remaining children were brought under the influence of bromine. The bromine treatment was carried out thoroughly, and he himself made the applications to the fauces of the children; but, notwithstanding, three more of the little patients died. Thus, out of four children upon whom the chlorate of potassium treatment was employed, three died, and out of four upon whom the bromine treatment was employed, three died. The father, mother, and grandmother also had the disease, but recovered.

Dr. Smith inquired if the urine of these children was examined, and Dr. Randall replied that he thought it had not, though there was nothing abnormal about its appear-

ance in any of the cases.

Dr. Smith then stated that in malignant cases albuminuria might be found as early as the close of the first day, though the urine was perfectly normal in appearance, having none of that smoky look which is so common in scarlatinal albuminuria. It was now his practice to examine the urine in every case of diphtheria that came under his care. In his experience, diphtheritic nephritis was an exceedingly frequent complication, and he regarded it as much more grave than the scarlatinal ne-

phritis. Dr. Chapman's idea was that the early and free use of alcohol would prevent nephritis and other serious complications or consequences, and if it could be proved that this was really the case, the treatment would cer-

tainly soon be held in the highest estimation.

Dr. Randall remarked, in conclusion, that after the unfortunate series of cases which had been described, he continued to use the chlorate of potassium and glycerine, with brandy punch given freely, and that he had not lost more than two or three cases out of quite a large number, many of which were quite as severe as some of those in the family in which such frightful mortality occurred.

SURGICAL SECTION.

REPAIR AFTER EXSECTION OF THE HIP-JOINT.

Dr. Lewis A. Sayre gave, as an illustration of the repair which might take place after exsection of the hipjoint, a detailed history of the case of Rosa Mullins, who was operated upon in Bellevue Hospital, September 29, 1875. The patient died March 4, 1878. The report consisted of the history of the case and notes as made in his private case-book, also as written in the hospital records, was accompanied by a post-mortem report as dictated by Dr. E. G. Janeway, and a report of the microscopical examination as made by Dr. C. Heitzman. The morbid specimen accompanied the paper, and exhibited a most remarkable amount of repair which had occurred since the operation. It was the case to which allusion had been made by Dr. C. Fayette Taylor, in a paper read before the New York Medical Journal Association, February 15, 1878, and published in abstract in the Medical Record for March 2, 1878. From the hospital record, it was shown that, on October 30, 1875, the incision made in the operation was closed, and that the child could walk by the aid of a wheel-crutch. At that time there was a small open sinus on the posterior aspect of the hip, and that sinus remained open during life, but, at autopsy, it was found that it did not communicate with dead or diseased bone. The repair which had taken place gave to the upper extremity of the femur a most striking resemblance to the great trochanter neck and head of the healthy femur upon the opposite side. There was considerable motion about what might be called the newly-

formed head, and the microscopical examination demonstrated the presence of newly-formed cartilage. From May 19, 1876, until November, 1877, Dr. Sayre did not see the child, and from the hospital record it appeared that no means were employed with the view of maintaining extension, from the first date up to the time the child died, and yet the lower extremities were of equal length. The liver, spleen, kidneys, and intestines had undergone waxy degeneration, and there was angular curvature of the spine, although there was no carious bone present. The liver was enlarged, and there was evidence of waxy kidney at the time the operation was performed. Notwithstanding the unfavorable condition of the child, it seemed very evident that the operation had been followed by most extraordinary repair, and in no sense could it be said that the child died because of its performance. On the contrary, Dr. Sayre believed that the autopsy proved that the operation was not only justifiable, but demanded even in cases in which it was evident that waxy degeneration of internal organs had already taken place.

Bad Medicine.

BY LUNSFORD P. YANDELL, M. D.,

Professor of Therapeutics and Clinical Medicine in the University of Louisville, Kentucky.

A YEAR since, when dialyzed iron was a novelty, I commended it in the News as a most valuable addition to the materia medica. Twelve months of additional experience have confirmed my faith in its excellence. The object of this note is to call attention to the great variety of spurious preparations sold under the name of dialyzed iron. In this city I have found nine varieties of so-called dialyzed iron. Some of these were manufactured here, but most of them were made elsewhere. Genuine dialyzed iron is nearly tasteless. It has the faintest possible saline flavor, and a mere suspicion of roughness. Slightly diluted, its taste recalls that of fresh blood. It is not in the least unpleasant, and does not blacken the teeth or tongue. It seldom or never produces any gastric disturbance or headache, and very rarely constipation. It is exceedingly reliable and rapid as a tonic.

The spurious forms of this drug are without the characteristics of taste and efficacy above enumerated, and chemical analysis readily detects their deficiencies. One of the spurious specimens, before alluded to, was little less unpleasant than the tincture of muriate of iron; another was excessively acid; another was decidedly saline; another was exceedingly astringent; another was sweetish; another was bitter; and another was seemingly only colored water; another more nearly approached correctness; but only a single specimen possessed the peculiarities of the true article.

My attention was first directed to this matter through the failure or misbehavior of the dialyzed iron in practice. It is but just to say that the good specimen is from Wyeth & Brother, the original manufacturers of this medicine in America. Wyeth's dialyzed iron sells at about a dollar a pound. Other makes may be bought at fifty cents.

TINCTURE OF THE CITRO-MURIATE OF IRON, OR TASTELESS TINCTURE OF IRON.

This is one of the very best of the ferruginous preparations. It is only second, if, indeed, it be second, to dialyzed iron. It is equally efficacious with the old and justly-esteemed tincture of the muriate, except, perhaps, as a hæmostatic. It should be of a beautiful olive-green color, and should possess a faint, not unpleasant, saline-acid taste, almost neutral. One ounce of this with two of syrup, and a few drops of lemon-oil, makes a most elegant and agreeable tonic, particularly suited to women and children. The dose is from one scruple to one drachm. A teaspoonful of the foregoing mixture is a fair dose, thrice daily.

Unfortunately this medicine is more often found improperly than properly made; and there is no excuse for this, as tincture of citro-muriate of iron is neither difficult

to make nor expensive.

ELIXIR OF CALISAYA BARK AND PYROPHOSPHATE OF IRON.

As a combined bitter and ferruginous tonic this has no superior. It is palatable and potent when properly made, but unhappily no article of the materia medica is more various in its preparation. It should be a pleasant aromatic bitter-sweet, without inkiness of flavor, and of an amber color, and it almost never disagrees with the stom-

ach. It is the exception to the rule to find a first-rate article in the shops.

CASCARA SAGRADO.

Parke, Davis & Co. manufacture a fluid extract of this drug which is a pleasant laxative in half teaspoonful or teaspoonful doses thrice daily. In tablespoonful doses at bedtime, or before breakfast, it is a good purgative. It seems to act upon the liver. It retails at twenty five cents to thirty-five cents an ounce, which makes it too expensive for general use.

PICRATE OF AMMONIUM.

The same manufacturers lately sent to the University Dispensary a lot of one and two grain pills of this newly-suggested antiperiodic. After a careful trial of it in more than thirty cases of intermittent fever, I am compelled to report that it has proved a failure in my hands. It was given in one or two grain doses, sometimes more, thrice daily, for a week. Not only did it not break up the malarial troubles, but it produced gastric derangement in a number of cases, and with not a few patients it caused yellowness of the skin and conjunctiva.

TAMAR INDIEN.

This is an expensive patent laxative manufactured in France. It is said to be made of the pulp of the tamarind, together with aloes and other purgatives. Under the Code of Ethics no physician can honorably prescribe a patent medicine, and yet this and other patent medicines are prescribed by some physicians of standing here and elsewhere. (The writer is not one of them.)

Mr. Springer, of this city, has lately made an agreeable confection closely resembling the tamar-indien lozenges, which is a reliable laxative. It contains tamarind-pulp,

chocolate, podophyllin and other laxatives.

SULPHATE OF QUINIA,

This drug, the most valuable that we possess, has now become so expensive that it is more important than ever that we look jealously to its purity. For some months there has been no little complaint among physicians that quinia is less reliable in its action, and more unpleasant in its effects, than formerly. In my own person, and in my practice, I have of late been painfully impressed by

the belief that our quinia is not what it used to be. Excessive dryness of the nose and throat, fullness of the head, vertigo and nausea, are symptoms most rarely produced by quinia; and yet, in my own case, and in not a few patients, I have encountered these results of late. These symptoms are common when cinchonia is used, and cincho-quinine and quinidia often produce them. Besides this, my experience and that of many of my medical acquaintances is that much larger doses of quinia are now required than formerly, and certainly the malaria of this season is not remarkably intense in its manifestations.

SWEET SPIRIT OF NITER.

When genuine this costs here forty three to forty-five cents a pound, wholesale, and yet our prescriptions are chiefly filled with an article costing only thirty-two, thirty and even twenty-five cents a pound.

HOFFMAN'S ANODYNE.

About one dollar and ninety cents is the wholesale price of genuine Hoffman's anodyne, but most of our prescriptions are filled with an article which is bought for forty-three to forty-five cents a pound.

It is easy to see how uncertain and unsatisfactory the practice of medicine is rendered by this state of things. The importance of taking prompt and effective steps to

remedy this evil can not be overestimated.

How may we best accomplish the desired end?

The specimens of the medicines spoken of in these notes were procured from some of the best wholesale and retail druggists in this city, and the information concerning the prices is from the same source. It is but due to this branch of trade to say that nowhere is there a higher standard of pharmaceutical knowledge and skill, or a greater degree of personal integrity, than in Louisville.

Chloroform and Dentistry.

Notwithstanding all that has been said regarding the dangers of chloroform for ordinary dental operations, there are still to be found dentists who are willing to take the risks. It is difficult to understand why this is so, unless it be that some members of the dental profession are deter-

mined to defy professional opinion and ignore recorded medical experience,

But, whatever may be the explanation, we are every now and then startled by the report of another death from chloroform in the dentist's chair. The latest of the kind comes to us from Philadelphia, and, as it helps to point anew an old moral, we give its history in some detail.

On March 20th, Mrs. Elizabeth Neely, of Hatboro, N. J., went to the office of Dr. H. G. Winslow, dentist, of Philadelphia, to have some teeth extracted. Dr. Winslow asked the patient whether she was in perfectly good health, and, upon her answering in the affirmative, at once proceeded to administer chloroform without making any previous examination of the woman's heart. Three teeth were extracted following the first administration of the drug. The doctor again applied the anæsthetic and had extracted another tooth, when he was alarmed by discovering that his patient had stopped breathing. Electricity and other restoratives were at once employed, and several well-known practitioners called in, but their combined efforts could not resuscitate the unfortunate woman; she had died from heart disease precipitated by the incautious use of chlo-Dr. Winslow at once surrendered himself to the authorities, and has been upon bail ever since. The coroner's office was densely packed the other day upon the occasion of the inquest upon the body of Mrs. Neely. The coroner's physician detailed the result of the post-mortem, which showed that the heart had been diseased. After the hearing of all the testimony taken, the jury rendered the following verdict:

"We find that Elizabeth Neely came to her death March 20th, 1877, at No. 224 North Tenth Street (Philadelphia), from chloroform, administered by H. G. Winslow, M. D., and we find the said Dr. Winslow guilty of criminal ignorance in administering so powerful a remedy without having made any previous examination of his patient."

Coroner Gilbert, addressing Dr. Winslow, said:

"Dr. Winslow, before discharging this case, I must perform a duty which I owe to the community as their representative in this office, and that is to censure you for using so dangerous a remedy as chloroform in so trifling an operation as the extraction of teeth, more especially when you have at your command a much safer substitute in sulphuric acid. and a perfectly harmless one in nitrons-

oxide gas. You are not only to be censured for using chloroform in such a case, but also for using it without having previously made a careful examination into the physical condition of the various organs of your patient's system. Chloroform is a most powerful sedative, and far more dangerous to life than any of the other anæsthetics. On this account a number of hospitals have prohibited its use. The medical prosession has, almost unanimously, settled down to the opinion that it should only be used in capital operations, and then only after the most careful examination. Although the verdict of the jury and this censure will not bring back the mother to the little ones, or the wife to the husband, it may be the means of directing the attention of dental surgeons to a more careful use of chloroform, and of the community—which is the party most interested—to the great danger attending its use, and thus, perhaps, similar accidents may be avoided in the future."

The accused was then committed by the coroner to

await the action of the grand jury.

The verdict in this case was an eminently proper one, and it is what might have been expected from the character of the testimony offered to the coroner's jury. But it has an additional significance in connection with the fact that the jury was composed entirely of medical men. It is hard to arrive at any other conclusion than that the neglect to examine into the patient's condition, or even to feel her pulse, was not only culpable, but actually criminal. In this instance it would appear that death was the direct result of such negligence on the part of the gentleman administering the anæsthetic, inasmuch as a previous knowledge of the patient's condition, which an examination of the chest organs would have afforded, would have, or at least should have, ruled chloroform out of question. There is but little doubt that the grand jury will sustain the coroner's verdict, and that the case will come up in court for trial. There will then, doubtless, be brought up many interesting scientific points connected with the case, which will invite further comment.

In respect to neglect of previously examining the patient, the case is similar to the recent Rahway tragedy, in which the boy died in the dentist's chair as the result of chloroform-poisoning. In that instance, however, the heart, and, in fact, all the organs of the body were in a

healthy condition at the time, the only special contra-indication to chloroform being a full stomach, which condidition was not ascertained previous to the administration of the anæsthetic. Although there was no doubt, from a medical point of view, that the boy's death was caused by chloroform carelessly administered, it was difficult to prove that point, more especially as the prosecuting officer in that case did not seem to be equal to the occasion. As will be recollected, the line of defense was that of idiosyncrasy on the part of the patient, and the jury gave the prisoner the benefit of a doubt regarding that point. In the case of Dr. Winslow, however, it does not appear that such a defense can be urged, inasmuch as the heart was unhealthy, and of itself directly invited the fatal issue.—

Medical Record.

A Physiological Hint to Photographers.

BY THOMAS BUZZARD, M. D.

DISCOMFORT, amounting in many persons to actual distress, is experienced in sitting for a photographic portrait. The eye is fixed on a certain spot, and, whilst staring at this, vision becomes indistinct, surrounding objects especially being lost in a thickening mist. A feeling of giddiness, and even of faintness, is apt to follow if the sitting is at all prolonged. Whilst undergoing an ordeal of this kind a few days ago in Mr. Fradelle's studio, the idea came across me that this strain was unnecessary, and could be avoided by a simple contrivance. Having begged a piece of paper and drawn upon it a circle of about four inches in diameter, I converted this into a sort of clock-face by adding the usual Roman figures in their accustomed places. The paper was then nailed to a post about eight feet distant, and when the sitting began I first fixed my eyes upon the figure XII., then upon I., II., III., and so on, "all round the clock," the gaze shifting leisurely from one figure to another. As I had anticipated, the sitting ended without any sense of strain, mist, or giddiness having been felt; and in place of the eager longing for release usually experienced, it seemed to me that I could have sat on without effort.

As Helmholtz clearly puts it, "to look at anything

means to place the eye in such a position that the image of the object falls on the small region of perfectly clear vision. This we may call direct vision, applying the term indirect to that exercised with the lateral parts of the retina-indeed, with all except the yellow spot." The mistiness which occurs when the gaze is long fixed in one direction appears to come up from the periphery of the field of vision. This means probably that the fatigue of the nervous element is shown first in those portions of the retina which are least highly developed, and where vision is indirect. These parts in the ordinary method of procedure are subjected to a constant strain for a period which frequently amounts to sixty or seventy seconds. By the plan which I adopted, each movement of the eye which brought a new clock-figure upon the yellow spot necessarily shifted also the position of all surrounding objects in relation to the rest of the retina, fresh points of the nervous layer being thus presented to the action of luminous rays every three or four seconds. Hence fatigue of the nervous element never had time to occur. On the other hand, the rotatory movement of the eyeball in adapting itself, step by step, to the figures upon so small a circle at such a distance was so excessively fine as to cause no interference with the photographic process. Mr. Fradelle, who has since applied the suggestion in many other cases, writes me that "the eyes are excellently well-defined, even to the iris. Not alone yours, but all the pictures I have taken since have a marked superiority over those I had previously taken in the manner in which the details of the eyes are reproduced. In my opinion, the success of your idea is unqualified. have questioned my sitters after the operation, and they express themselves as not having had any strain upon their eyes."

It is evident that the plan described is likely, incidentally, to prevent to a great extent the staring expression which the face assumes when the gaze is long fixed upon an object, for it combines a certain amount of free play of the eyes, with accuracy of photographic definition. A somewhat larger circle, I have no doubt, may be employed with even greater advantage; and printed words, pictures, or other objects, may replace the figures. For children, and others who do not easily follow directions, a disc with a single aperture toward its edge might be

made to revolve, in the direction of the hands of a clock, before another disc prepared with pictured objects of some kind or other, so that one would appear at a time at short intervals of space, and attract the eye. Various other modifications, indeed, at once suggest themselves as feasible, so long always as the figure toward which the gaze is directed presents a succession of objects arranged in a circular form.—Lancet.

Progress in Telephony.

WE have been greatly interested in some experiments with this wonderful instrument recently made at the residence of a neighbor, Mr. Thomas Saunders, of Haverhill, Mass., who is the associate of Professor Bell in the ownership of the invention, and who has been with him from the start watching the development of the discovery as it has progressed step by step. He has formed telephonic connection between his residence and place of business, a distance of more than a mile, and over this wire interesting experiments have been made, some of which are new. A son of Mr. Saunders, born deaf, has been in charge of Professor Bell for several years, and under his training he has learned to articulate sounds, and talk with facility. The little boy is now capable of speaking to his parents in distinct language by telephone. This conversation, by means of a flexible wire over a distance of a mile, presents a combination of wonders well calculated to impress the mind with awe, and illustrates the astonishing progress of the age in scientific discovery. Probably no instance of this nature ever occurred before in any country. What are spoken of as miracles in the Bible have now become matters of fact brought under the notice of every one capable of observing. The "dumb speak," not only to those immediately around them, but to those separated by many intervening miles of space.

Among the recent improvements in telephony, the new bell signal is of importance, and also the hand telephone, by which all disturbing influences are cut off and conversation can be carried on amid din and commotion with perfect facility. The bell signal is operated without a battery, and it should be kept in mind that all the operations of Professor Bell's telephone are conducted entirely independent of any battery power. This is a wonderful feature of the plan. The signal designed to call the attention of separated parties to the instrument consists of a small magneto-electric device, by which bells are struck at each end upon simply turning a wheel and rotating the coils. This improvement saves the loud and painful calling through the telephone, and insures instant attention.

The hand telephone is constructed of wood and looks much like a physician's stethoscope. It is light and convenient, and being attached to the wire by flexible conductors, can be taken up and applied to the mouth or ear very conveniently. The difficulties in the way of the practical use of the invention have been one after another surmounted, and it stands a completed marvel, ready to commence its great work in facilitating correspondence among the nations of the earth. In our experiments with the apparatus, it has been found that the effort of conversing over the wires is greatly diminished, and now two individuals fifty miles apart can converse together with as much ease as if occupying the same room. The clearness of transmission is such that we find no difficulty in recognizing the voices of those we know, and the slightest whisper is perceptible.

The Bell Telephone Company was formed in this city August 1, 1877, and already, in the short space of three months, more than twenty-six hundred instruments are in practical use, in various parts of the country. Boston has three hundred, New York has about the same number, Cleveland two hundred, and Cincinnati one hundred. They are indeed scattered through the country, from Galveston in Texas to Montreal in Canada, doing practical work in various appliances.—Boston Journal of Chem-

istry.

MICROSCOPY.

San Francisco Microscopical Society.

CONCLUSION.

It is necessary to say at once that this instrument can not magnify time. It can not for convenience of observation make a vibration, lasting one-thousandth of a second, seem

to last a second, as the zoologist's microscope makes an animalcule the thousandth of an inch long, seem an inch long. It simply enables the physicist to follow the path of a very rapidly moving point. Every one has noticed that a bright object, as the burning end of a stick moved quickly to and fro, appears to the eye a luminous path. This luminous path, made by a rapidly moving point, is what the investigator views with his vibration microscope. Suppose that vibration form of a violin string is to be observed: a small portion of it is blackened, upon this black surface a minute grain of starch is stuck, and then the path made by this bright white grain when the string is bowed is watched with the microscope. It might be supposed that when the form of this path is observed, all is accomplished. Not so. The luminous point may move through the same space and make the same path under very different velocities in different parts of the path. This difference in velocity within the same vibration can, of course, have no effect on the luminous path; the burning stick may be jerked rapidly through half its course, and pass over the remainder only moderately fast, the same figure of fire will be formed however its velocity may vary, if it always follows the same course. But this variation in velocity within the same vibration is the very thing that causes the differences between timbres; that makes one tone shrill, another mellow, another resonant; and it is the peculiar office of the vibration microscope to make this variation in velocity visible. To accomplish this, the object glass of the microscope, by attachment to one arm of a tuning fork, is itself made to vibrate rapidly in a direction at right angles to or across the path of the starch grain. Now, to move a magnifying glass about over an object, causes an apparent motion of the object itself. Here are, then, two motions at right angles to each other, and when both take place at once, the observer sees the real horizontal motion of the luminous point, combined with its apparent vertical motion (caused by the vertically vibrating object-glass of the microscope, which is horizontal), and the combination results in an apparent curvilinear motion, passing diagonally across the field.

To understand how the addition of a second motion brings to light the variations in velocity of the first, imagine two horses attached by long ropes to a heavy load. One always pulls *north*; the other always *east*. Were

either alone drawing the load, we could tell by the track left the direction taken, but not the velocity. Two or twenty miles an hour would leave the same track, in the same direction, east or north. But, leaving out of consideration the relative strengths of the two horses, when both draw the load—one north the other east—it is evident that the load will move diagonally northeast, and the path it takes will be an exact record of the relative velocities of the two horses. Evidently, if "North" go twice as fast as "East," the direction of the load will be much nearer north than east, and vice versa. If the velocity of one is constant and of the other continually varying, the track left by the load will curve from one direction to another—the direction at any one point always showing the relative velocities of the two horses at that point. In a similar manner the physicist, unable by watching the vibrating point in its single motion to discover the variations in its velocity, adds to this another apparent motion at right angles to the first and of uniform speed; then the resulting path reveals, by its changing direction, the changing velocity of the vibration and the cause of the peculiar timbre we may be investigating, as far as it depends on this varying velocity, is discovered. To those familiar with the parallelism between acoustical and optical phenomena, it may occur that the vibrations of the atoms and molecules which originate light waves may some time be also investigated with a vibration microscope. It is impossible. To talk of seeing an atom is as absurd as to propose a game of chess with only one piece, or for a man to attempt forming himself into a hollow square, as Baron Munchausen is said to have done in an occasion of danger. The nature of any magnifying apparatus requires that the object viewed shall send forth a number of light waves; by changing the "visual angle" between the directions of these waves the object is magnified. But each vibrating atom is, by hypothesis, the origin of only a single wave. How can it be magnified?

A Valuable Present of Dr. Carpenter's Slides—A San Francisco Objective by Mr. Wilkins—Sponges as a Compound Infusoria—A Microscopic Microscope.

THE regular meeting of the San Francisco Microscopical Society was held Thursday evening, April 4th, President

Hyde in the chair. The meeting was a most enjoyable one, and the rooms were well filled.

Rev. Mr. Bleasdale created a stir of pleasure by a fine gift to the Society of a dozen of Dr. Carpenter's own slides, mounted by and bearing the handwriting of that great leader in microscopic research. All eyes were busied for many minutes in eager examination of these early working slides of the illustrious microscopist; some seemed to be the very originals of the illustrations in his standard work on the microscope.

A cordial vote of thanks was given Mr. Bleasdale for

this gift, of such historic as well as intrinsic value.

Father Bleasdale exhibited one of Swift's pocket microscopes, a wondrously compact little affair, almost microscopic in two senses, furnished with an inch and one fourth inch objective. The striations of muscular fiber were

easily seen with it.

The evening was evidently to be an instrumental one, for President Hyde produced a quarter-inch objective, manufactured in every particular, from lenses to brass work, in San Francisco. It was made by Mr. Frank Wilkins, who formerly worked for Ross in England, but now is with Mr. John Roach, of this city. Upon comparing the objective with a Smith & Beck's quarter, it was found to be fairly equal to it in every respect. The members found a new confirmation, added to the many which California has furnished, that "Westward the course of Empire takes its way."

To have founded and maintained a Microscopical Society on the very western edge of this continent, where the specimens for an evening's seance may have been collected during the day in primitive forests, and where society is passionately bent on money-making, must be a source of just satisfaction; but that the time has come when, in our own city, Mr. Wilkins can equip the members of this society with the most intricate product of optical manufacture, should certainly fill them with envi-

able pleasure.

President Hyde also surprised the members with the results obtained with his periscopic B eyepiece, Gundlach,

the first one of this improved kind made.

The only formal communication of the evening was a verbal one by Mr. Clark, who spoke of recent investigations in the sponges and infusoria, which add still greater

strength to the theory of his father, the late H. James Clark, that the sponge is a compound, flagellate infusorian, as against the theory that it is a single individual in which the collar and flagella bearing monads are simply tissue elements, like ciliated epithelium. This latter theory Haeckel strenuously supports in the interests of his celebrated Gastraea theory, but he does it in the face of all facts except those coming from the interpretation of the so called "ciliated larvæ;" and other interpretations favorable to Prof. Clark's view have been reached by Russian, French and English observers (see Barrois, Metschnikoff and Kent) not bound to support a Gastraea theory.

Kent, in the Annals and Magazine of Natural History, January, 1878, describes a solitary collar-bearing monad, in which he has discovered the function of this peculiar collar. It is a wonderful food-trap. The currents of water created by the flagellum carry particles of food to its exterior slimy surface; they adhere, and, by a continuous motion of the collar upon the outside, down within, and finally into the sarcodebody the food is conveyed, as it were, by an endless revolving belt. Can all this complex-

ity of functions belong to a mere tissue element?

Minute Anatomy of the Kidney---Ophthalmoplegia Interna.

THE ordinary meeting of the Royal Medical and Chirurgical Society was held on the 9th inst., Dr. C. West, Presi-

dent, in the chair.

Dr. W. M. Ord showed two women the subjects of the peculiar affection which he had called Myxœdema, described by him in a paper read before the Society early in the session. (See the Lancet, vol. ii. 1877, p. 610.) These patients are now under his care at St. Thomas' Hospital, and are typical instances of the affection. Dr. Ord, in giving a slight resume of the disease, said that analysis of normal and of simply ædematous skin yielded hardly any mucin, which abounded in the skin in this condition.

A paper was read "On some Minute Points in the Anatomy of the Kidneys, and their Relation to the Pathological Feature of Urinary Casts," by Dr. Reginald Southey. The continuous system of the urinary tubules is first de-

scribed by the author, and traced from their commencement in the papillæ renales up to the Malpighian bodies. The tubuli uriniferi thus commence in primary excretory oval orifices in the medullary cones, which measure from 0.3 to 0.19 mm. in diameter. The short trunks these open into have no membrana propria, but are set in and bounded by fibrous connective tissue; they each split up into rectangular running branches or gathering mains, and from them perpendicular mounting branches are distributed, which quickly split up again into ascending stems or collecting branches of the third order. These collecting tubes are, first, branches which can be made out to possess a delicate membrana propria, and to be distinctly lined with a low sessile columnar epithelium, and to present lumina. They measure from 0.0501 to 0.0510 mm. in diameter, and, while bifurcating at the marginomedullary level into a number of branches, these are all of nearly the same caliber (0.01 mm.). The collecting tubes curl over into the tortuous tube districts, and become the tortuous tubes, enlarging in size considerably, measuring on an average 0.0201" or 0.033", while the epithelium lining their membrana propria nearly fills up their bores. The tubes, however, do not retain their tortuous or glandular characters for long, but turn back into the straight tube columns from which they started, and drop, as Henle's down-loopers, in juxtaposition with the collecting tubes. These down-loopers are the narrowest tubes of all, 0.008" to 0.009". They are transparent-looking, and lined with a flattened pavement epithelium, surmounted by slightly projecting nuclei; they retrace their passage into the convoluted columns, and once again gradually enlarge in diameter, and acquire the attributes of tortuous or secreting tubes proper. If these diameters and the relation of the secreting system of tubes to the collecting system, the former being directly united to the latter by very narrow midway canals, be considered, it will be obvious that anything like a desquamative shedding of epithelium from the secreting tubes could not pass into the collecting tubes. Further, the size and shapes of all casts are found to correspond with the excretory system of renal tubuli. Their most fertile source Dr. Southey believes to be the collecting tubes or ascending straight tubes of the third sub-division; in these are found the ordinary urate infarcta of new-borns, and the

granular and fibrinous casts of chronic renal degeneration. The fine fatty streaking and lime deposits of old persons are seen more strictly limited to the transparent midway channels or down-loopers. The largest old fatty granular cast, which consist of a cellular debris, leucocytes, fat dottings, and urinary salts, are doubtless cast or molded in the gathering mains close to the orifices of the papillæ, but can not be held to be secretions from the tortuous secreting tubes deprived, as has been by some supposed, of their epithelial linings. The value of casts in deciding the diagnosis and estimating the advancement of renal diseases has been much overrated. Their different forms and appearances are derived in part from the materials of which they are composed, but in greater part are due to the length of time during which the gelatinized plugs of fibrinous material derived from the bloodserum have resided in the passages whose mold they take, the degree in which they have been soaked with urinary salts and stained with urinary pigments, and become degenerated. After many years' vain search for them, nothing like a desquamative shedding of the epithelium lining a tortuous tube has ever been observed by the author. And although red and white blood-cells, leucocytes, and escaped nuclei have been constantly observed in acute nephritis entangled in fibrinous plugs, the actual linings of the straight collecting tubes, with their low, sessile, columnar epithelium, have as such never been recognized by him. To form any clinical inference as to the nature and extent of renal disease from the sediment of the urine and tubal casts is about as unsafe as forecasting the issue of bronchitis or pneumonia by the expectoration. It is not that the casts or the character of the expectorated matters have no clinical value, but they have a relative one only. In renal disease, the casts should be appraised side by side with the diurnal urea excretion, and considered in reference to the quantity of albumen excreted at different periods of the complaint.

Dr. George Johnson said that he differed almost totally from Dr. Southey's statements, which, if true, would show that there was very little diagnostic value to be set upon the study of renal casts. The author's main argument rested on the assumption that all the convoluted tubes were connected with the looped tubes; but this could not be proved, and Dr. Johnson much doubted it as a fact.

for he was quite certain that casts formed in the convoluted tubes do appear in the urine. For example, in cases of renal hemorrhage from turpentine, casts appear in the urine formed of blood, which, it is perfectly certain, comes from the system of the Malpighian capillaries; such casts are molded in the convoluted tubes, and often appear quite convoluted themselves. Casts formed of white blood-corpuscles must also proceed from the exudation of leucocytes from the Malpighian tufts, for no changes are found in the tubules indicating their passage through the walls and epithelium. The majority of fatty casts, too, had their origin in the tubes of the cortex, which was preeminently the seat of fatty degeneration. He was surprised at Dr. Southey's statement that he had never met with an epithelial cast, for he had seen casts covered with undoubted glandular epithelium in a vast number of cases. A common instance of epithelial shedding was met with in cases of obstructive jaundice. If the epithelium could not be got rid of, every inflammation of the kidney, even the slightest, might lead to fatal results from blocking of the channels. Desquamation implied formation of new cells as well as shedding of the old. Dr. Johnson also stated his firm belief that the large size of casts was an indication of their formation in tubes denuded of epithelium; whilst, on the other hand, small flattened casts were found when the epithelium remained and was swollen. He did not agree with Dr. Southey that the large hyaline casts were most numerous in acute cases; they occurred mostly in chronic cases, and their abundance was in direct relation to the amount of atrophy and disorganization of the kidney present.

Dr. Andrew thought that the author had not allowed sufficiently for the compressibility of the materials forming casts and the dilatability of the tubes through which

they must pass.

Dr. Powell asked whether it was essential that all materials exuded into the urinary tubules should pass out as casts? Might not they often undergo liquefaction and absorption, as in the alveolar exudation of pneumonia?

Mr. Howse, speaking of the formation of casts in acute nephritis, suggested their production from transformed renal cells. He had constantly seen in such conditions the tubule filled with cells distended with clear material; and casts might be formed by the union of such altered cells.

The delicate character of such structures would favor

their ready liquefaction and absorption.

Dr. Southey, in reply, said that, had he entered into pathological details, he should certainly have drawn attention to the fact that the products of renal inflammation could be absorbed as Dr. Powell had suggested; but his main object had been to show that the existence of the looped tubes (which, from their number, he believed were connected with all the excretory tubes) was a priori evidence against the passage through them of casts formed in the larger convoluted tubes. Granular material and detritus, no doubt, did traverse them, and in chronic parenchymatous nephritis the excretory tubes were found blocked with such products; but he had never seen anything like an epithelial cast which could have been formed by desquamation of the secreting epithelium. The convoluted tubes varied much in size in their course. and he had not met with casts reproducing their characters in this respect. As to the formation of small casts between swollen epithelium, that was pure speculation, and he believed himself that these finer casts came from

the looped tubes.

The following is an abstract of Mr. Jonathan Hutchinson's paper "On a Group of Symptoms (Ophthalmoplegia Interna) indicative of Disease of the Lenticular Ganglion." After briefly alluding to the anatomy of the lenticular ganglion, the author stated that its destruction by disease might be expected to be followed by paralysis of three distinct muscular structures—the dilator of the pupil, the constrictor of the pupil, and the ciliary muscle. Under such circumstances the pupil would become motionless, and the patient, losing the power of accommodation, would be unable to read with spectacles. For this condition, involving paralysis of all the muscular structures within the eyeball, the term ophthalmoplegia interna was suggested, whilst that of ophthalmoplegia externa was proposed in contra-distinction for cases in which all or most of the muscles moving the eveball were involved. The author expressed his belief that examples of both these conditions were met with occasionally in practice, and that the features of each were peculiar and of great interest to neuro-pathologists. His conjecture was, that when ophthalmoplegia interna existed alone—that is, unattended by paralysis or defect of any of the external

muscles of the eyeball-the disease was, in all probability, in the lenticular ganglion itself. In venturing upon this diagnosis, as great importance was to be attached to the absence of some symptoms as to the presence of others. If disease existed implicating the nucleus, or any part of the trunk of the third nerve, and this paralyzing the constrictor of the pupil, there must necessarily be defect of some of the external muscles of the eyeball. The paper next proceeded to narrate the details of eight cases in which the condition referred to was present. None had afforded an opportunity for dissection, and the diagnosis for the present must therefore be held to be conjectural only. It was observed however, that the cases bore a very close resemblance to each other. In none of them was the patient seriously ill, and in but two were there definite indications of implication of other parts of the nervous system. In none did the disease of the nervous system whilst the patient was under observation extend, a fact which might, it was suggested, be in part accounted for by the fact that specifics were used in all. Of the eight cases in five both eyes were affected. It appeared highly probable that syphilis was in most the remote cause. In three out of the eight there was no history of syphilis, but in none of these were the facts conclusive as to the negative. All the patients were of an age at which syphilitic affections of the nervous system are common. The eldest was fortyfour, the youngest twenty-seven. In one case the author had himself attended the patient for severe syphilis four years before the eye symptoms began. Attention was especially asked to the fact that in many cases the paralysis of the iris preceded that of the ciliary muscle, and was almost always in excess of it; and, further, that under treatment the ciliary muscle might regain its power, whilst the iridoplegia persisted. In no single case was the failure of accommodation the first symptom. A suggestion was made as to the possible association of this group of symptoms with the early stage of locomotor ataxy, especially with that form of it which appears to be connected with syphilis.

Use of the Microscope.

BY L. R. PEET, BALTIMORE, MD.

This title is trite enough; it may suggest the question, What is the use of it? and what follows under it may, to some readers, seem also trite. The hope that it will not have that unexciting aspect in the eyes of all, induces me to give shape to the few disjointed reflections which here-

in after appear.

What I have to offer is not concerning the manipulation of the instrument; about that sufficient has been written, and is before the public, cheap for cash, to qualify any novice for his work, but the use to which it is put, or ought to be put, and its relations to that part of us which we call the mind. If the light which chances to be shed become at times cynically bluish, let it be set down to righteous indignation, holy wrath, or a similar noble emotion, rather than to mere hatefulness of dispotion.

It is a curious fact, not put down in any table of statistics, though, perhaps, it should be, that of twenty men, more or less, who buy microscopes, nineteen get tired of the thing they have imprudently bought, in from three weeks to three months, and either offer it for sale at half price, or some such shocking sacrifice, or put it aside, hoping the future will dvelop a member of the family who shall take to it, thereby driving out of the mind the bitter reflection that a foolish waste of income took place when the contemptible brass nuisance was purchased. From this the inference is perfectly natural, and may with due modesty be drawn, that the nineteen aforesaid are not fitted, by nature or by art, to any permanent use of this miraculous enlargement of the scope of the most important of our senses. They are so en rapport with their surroundings, as those surroundings are made apparent by the habitual exercise of the natural perceptive powers, that anything which opens up views that change this every-day relation, is a disturbance, and, therefore, to such degree irksome, that to keep it up would be to darken life. They accordingly do not keep it up. No blame attaches to them for this. Their motive in making the rash purchase was so good, indeed, so praiseworthy, as to relieve the act of any just opprobrium; and the subsequent pangs of regret, as a very genuine remorse, make smooth and straight again the moral part of the matter. If they did it twice, even at many years' interval, it might not be so easy to

exculpate them.

But they never do it twice, the longest life being too short to admit of the fading out of the memory of the first time they did it. Besides, in the great loss there is the usual slight gain, in the way of encouraging inventors, and by thus improving the instrument, profiting most of all the twentieth man; but this does not always follow, for that lonely individual does not invariably become a microscopist, in the best sense of the term. He is too often influenced by motives which are not entitled to much admiration. To gratify the vanity may be the sole incentive. Having the consciousness of possessing a power not in the hands of others, and that an air of mystery surrounds his employment of it, is not unfrequently the choicest part of the entertainment drawn from it. Making it teach him anything, or cultivate his sense of the beautiful in color, form, or adaptation of means to ends, never enters his mind. To do that would be, in his estimation, to become an enthusiast, and an enthusiast he despises as the least noble work of God.

Another twentieth man is smitten with the mechanical aspect of the thing invested in. He is lost in the contemplation of the ingenuity evinced in the structure, and his whole being is at once infected with an ambition to become an adept in the lore suggested, He wants to know, and be able to mouth, the names of all makers of celebrity in the entire Christian world; also to know the comparative merits of each; the price each charges for his work; whose work most effectually reduces to elements the outside morphology of fossil diatoms; whose is rated least defective in point of chromatic aberration; whose in the matter of spherical ditto, etc., etc. He studies catalogues diligently, making notes in a nicely bound blank book, bought for the purpose, and kept in a drawer by itself, for swift reference, in case of need. If well supplied with money, he procures specimens of all high-priced accessories, garnering them in his private apartment, as the raven of the fable did, damit er sie habe. If in an amateur way he happen to be inventive, he opens correspondence with two or three makers, and suggests. Some one maker is pretty

sure to hanker after his patronage, and treats his suggestions with profound respect, interspersed with jets of admiration; and that is the flower of his life.

A third twentieth goes further. After becoming an adept in the things mentioned, he buys a Moller typenplatte with two hundred on it; and when the mighty wonder how he or any other mere mortal could do it, has so far subsided as to admit of consecutive mental processes, he proceeds to learn the name of every diatom there shown. From this he passes to the catalogue list of tests. and gives his best hours to trying to resolve them. Depressed to the verge of suicide by failure, and elated to the utmost by success, he sells and exchanges, or purchases outright, until he can reach the great present purpose of his existence. In reaching this, his career practically closes. He may rise to the level of Nobert's lines. If so, he is apt to rush into print, and then finds so many disputes on his hands, concerning angular aperture, or the definition of the edges of things, that the microscope is changed into a mere weapon of offense and defense. If he doesn't write, he gives himself up to the perusal and ardent discussion of what others write. He becomes at last plethoric with microscopical technology, and that is his mental seeding.

The number of the above sketched is too large. constitute a guild, and by their doings taint the use of the microscope. They are professionals, and sneer at him who merely seeks to make the instrument a "help to see." "Oh, he does not know anything about the microscope. wouldn't give a snap of my finger for what he might say about it. It is true, he uses it a good deal-has made some so-called discoveries with it; but, then, do you suppose he can tell the angular aperture of a glass by looking at an object with it? Do you presume to say he has the remotest conception of what 180+ means? Can he tell whether his glass is corrected for a cover a 100th of an inch thick, or for one a 125th? He can't do it, sir. And put him at a late, improved stage, and you may be sure his own would become a milled-head in five minutes!" In this style they talk, and do harm. The writer of this has heard speech of just such animus, and with much less ed-

The fourth, and last twentieth is not the writer himself, but is a man he thinks uses the microscope as it should be

ification than was intended by the speaker.

used; and, because he does so, could no more give it up than the aged can give up their spectacles. He has made sure that his higher powers enable him to see things as small as the markings of amphipleura pellucida, and that his lower powers have clean, level fields. Then he has learned to make plain slides, and gone at it with the abiding zeal we should expect of one who had made intelligent, inquiring use of his natural powers of vision, beyond that required by the art of detecting counterfeit money, or the counting of cattle, sheep and swine on some hills of his own; who had read books which left him very eager to know more about the denizens of the stagnant pool; about the structure of insects and their embryos, and that of plants. The three months' interval that operated so disastrously on the nineteen, he has made use of to become accustomed to handling this new and astonishing aid to sight, and to learn the art of mounting objects. He has then begun to gratify his impatient longing to know. The presence or absence of this desire to be informed to gain new and varied mental experience—probably determines the curious statistical fact before mentioned. Many who purchase the instrument have no desire whatever to examine such things as they are expected to examine. They have no preparation of mind, in the shape of reading, which would enable them to understand what they see down the mysterious tube. And the worst of it is, they don't want to do the necessary reading. Their mental capsules have reached the desiccated stage, and they will not hear of having the embryos disturbed—in this world.

From a book, published in the year 1743, I extract the following, as showing the author's view of the microscope when that instrument was in its infancy, and when the mental preparation was comparatively hard to make:

"Many, even of those who have purchased microscopes, are so little acquainted with their general usefulness, and so much at a loss for objects to examine by them, that after diverting themselves and their friends some few times with what they find in the sliders bought with them, or two or three more common things, the microscopes are laid aside as of little further value; and the supposition that this must be the case prevents many others from buying them; whereas among all the inventions that ever appeared in the world, none can, perhaps, be found so con-

stantly capable of entertaining, improving and satisfying the mind of man,"

I do not want the impression left that I am playing the part of champion of the microscope, or trying to make appear respectable that about which there are misgivings. I am only endeavoring to explain phenomena, somewhat covertly desirous, it is true, of making those who care nothing for the microscope, more or less clearly perceive that this indifference is not a thing to be contemplated in themselves with complacency. Being thus indifferent to an agent of such exhaustless, yet easily available capabilities, is being indifferent to mental cultivation in its most varied form. That there is so little permanent interest in the microscope in this country is a most depressing sign. The significance of it is wide and deep.

National Microscopical Congress To be held at Indianapolis, Ind., August 14, 1878.

Indianapolis, Ind., April 22, 1878.

J. A. THACKER, M. D., Cincinnati, Ohio:

Dear Sir-I send you a copy of the circular addressed to Miscroscopical Societies throughout the country. I am not aware of there being a society in your city, but if there is one, please present this; if not, will you have the kindness to mention the Congress in your next issue of the NEWS. Drs. Woodward, Hunt, J. E. Smith, Ward, and other prominent microscopists, have given the movement their most cordial approval. Reduced railroad rates will be secured, as well as ample entertainment for all microscopical workers. Give us all possible encouragement, Doctor, and bring with you all your resident fellow-microscopists. Messrs, Zentmayer and Walmsley announce a magnificent display of instruments and accessories preparing, and Messrs. Shaffer, Hoover and Peet will exhibit cases of their best work. We will keep you constantly acquainted with notes of progress, or from time to time, if so desired. Yours faithfully, W. WEBSTER BUTTERFIELD.

CIRCULAR.

The American Association for the Advancement of Science will be held this year at St. Louis, Mo., on Wednesday, Aug. 21.

In view of this, a National Microscropical Congress has

been called to convene at Indianapolis, Ind., on the 14th of August, one week preceding the St. Louis meeting.

Microscopy has been raised to the dignity of a subsection in the above Association, and its aid to science fully recognized; but at its meetings, members are too much occupied in the sections where general results are presented, to give special attention to the department of microscopy.

No country in the world is now doing more to improve and develop the microscope, and promote its uses, than America, and it is hoped that this Congress will mark an era and stimulate scientists to still greater achievements

in this direction.

You are requested to present this matter to your Society for their indorsement at as early a day as possible, and report their action to

W. Webster Butterfield, M. D., 413 North East Street, Indianapolis, Ind.

GLEANINGS.

[From Virginia Medical Monthly.]

Phosphorus in the Treatment of Chronic Alcoholism.—
The Journal d' Hygiene, of February 21, 1878, contains an article on this subject, taken from the Gazette Medicale Italienne. Dr. d' Ancona, the author of the paper, remarks in the outset that this mode of treatment is not new, but he thinks it has not received the attention which it deserves. He justly states that the rapid increase of troubles, due to the excessive use of alcoholic liquors, and the great difficulty of treating such cases effectually, makes any remedy, which seems to render any service to such patients, worthy of careful study and investigation.

The etiology and symptomatology of chronic alcoholism are, alas, but too well known, and hence he deems it unnecessary to consider these points. He gives the details of five cases in which he has used phosphorus in the form of phosphide of zinc. We give a brief history of one of these cases. The treatment was commenced on the 20th of May, 1877, and continued without interruption till the 1st of October following. During this time the patient took from one to ten centigrammes of the remedy a day.

Eight grammes were taken in all. During the month of October it was only given four days each week, in the dose of three centigrammes each day. There were no evil results produced; no loss of appetite, and no gastric disturbance; indeed, the general condition steadily improved.

He comes to the following conclusions at the end of his

paper:

1. Phosphorus is a very useful remedy in the treatment of chronic alcoholism.

2. The medicine is perfectly tolerated in doses which no one has dared to give heretofore—ten centigrammes

(nearly 1½ grains) a day for many weeks.

3. The remedy gives to drinkers a feeling of comfort and strength, and furnishes the force necessary to carry on their organic functions, which they have been accustomed to get from alcoholic liquors.

4. The medicine seems also to have the properties of a prophylactic and an antidote, for it causes very beneficial changes in the system, even when the use of liquor has

not been entirely stopped.

Dr. d'Ancona then gives a theory as to its modus operandi in three cases, and in conclusion begs that a fair and impartial trial be given the medicine, and that the results be published.

TYPHOID FEVER OF RENAL FORM.—In Le Progres Medicale of March 9, 1878, is a brief notice of a little work having this title, by Dr. Charles Amat, of Val-de-Grace.

Dr. A. states that typhoid fever is divided into different forms, as different organs or systems are most prominently affected; for example, the central, cerebro-spinal and thoracic forms have been especially described. The renal form, he states, has been neglected thus far. He expresses his views in the following summary:

1. The typhoid poison may affect principally the kidneys, just as the brain, spinal marrow or lungs may be

the organs chiefly affected.

2. Although mentioned by Gubler, Robin and Hardy, no complete description has yet been given of this form of the affection.

3. It possesses a special symptomatology—slight diarrhœa, extreme dibility, ashy paleness of the skin, copious epistaxis, morbid delirium, and very high temperature.

There is but little eruption. The special symptoms connected with the urinary organs are, the bloody appearance of the urine, the presence of a sediment formed of red and white blood corpuscles and tube casts, and also the presence of albumen in considerable quantity.

4. The ordinary form of typhoid fever is differentiated from the renal form by the greater intensity of the abdominal symptoms, a more copious diarrhœa, by the delirium being less marked, the temperature lower, the eruption more confluent. The urine in the ordinary form is of an orange color; the sediment is not constant, and, when present, consists chiefly of urates and phosphates. The albumen is in very small quantity, if present at all.

5. In the renal form but few of the intestinal follicles are affected. The kidneys are enlarged, and present the

alterations of interstitial nephritis.

6. The renal form may be confounded with ordinary typhoid fever, and in certain cases with simple nephritis.

7. The course and duration of the affection are vari-

able; the termination is generally in death.

8. The condition of the urine is important with respect to prognosis; a diminution in the amount of sediment and albumen in the urine being of favorable import.

9. The patient should be subjected to a milk diet, and

cold baths are to be scrupulously avoided.

TREATMENT OF VAGINISMUS.—Dr. F. Weber, of St. Petersburg (Allg. Med. Central Zeitung, Nos. 1 and 2, 1878, and Allg. Wein. Med. Zeitung, January 22, 1878), thinks that the treatment of vaginismus should depend upon its cause, and should not be the same in all cases. Some local cause should always be sought for, and both local and general treatment are advisable.

The most common causes of the affection, he thinks, are a rigid condition of the hymen, gonorrheal or catarrhal inflammation of the vagina, and also cicatrices, ulceration, or exceriation of the vulva and outer parts of the vagina.

Organic contraction should be treated by methodical dilatation, at first with compressed sponge, and subsequently with Fergusson's specula, the size of which should be gradually increased. An ointment of belladonna is of great service at the same time. Inflammation of the vagina should be treated with cloths, wet with a solution of sugar of lead, injections with or without opium, and

belladonna suppositories. In the later stages, cauterization, with a solution of nitrate of silver, gives excellent results. This is especially serviceable when there are excoriations. Warm hip baths lessen the irritability of the nerves, and are of service. In addition to the local treatment, tonics and nervines should be used—especially bromide of potassium, iron and valerian. When no local trouble is to be found, and the sufferings of the patient are very severe, division of the nervous pudendus, as recommended by Simpson and Sims, should be practiced. The removal of the hymen itself or the myrtiform caruncule, Weber has never found necessary [though it has been repeatedly done by Sims and others].

TAKING OF SPANISH CENSUS.—In a recent lecture by Dr Raphael Mendex, of the Medical College of Barcelona. Spain, the speaker remarked that the taking of a thorough census of the Spanish population is a notable event in the history of the country. If science, and especially hygienic science, can be properly advanced thereby, the influence of statistical information will of course be very great. Let us notice what is proposed by the legal order for the taking of a census. In the first place, to take the census of the sexes, with their various occupations, etc., of each sex requires peculiar adaptability to the work on the part of the officer; and unless the work is properly attended to, more of error than truth will be brought out. Suppose a man and woman live together illicitly, how shall they be classified? and if they have children how are they to be registered? The usual error here is that the census is too particular. Again, as to the religions, many do not wish their belief known for fear of bringing trouble upon themselves. Not long since, the professors of Lerida had the courage to express their views, but had fines imposed upon them therefor. Others, no doubt, did not register their religious professions for fear of subjecting themselves to punishment of some kind. Or, again, the registration of marked physical defects, as quaint noses, big ears, the absence of one or more fingers or toes, or leprous diseases, is requiring too much at the hands of the census-taker, and will make the office very disagreeable and ridiculous. Doubtless the object is a good one, and would prove beneficial in the end if the duties are thoroughly performed.

Jaborandi.—In a discussion arising on this new remedy in the Medical Society of Madrid, Dr. Pedro Esquerdo said that he selected cases of rheumatism, pleurisy, pericarditis, dropsies, epistaxis, etc., in which to test the action of the drug. The most important results noticed were irregularity or inconstancy in its action, and the great number of accidents which occurred during its administration. As a sudorific, in his hands, it did not produce the effects he expected. Instead of a copious expectoration, salivation, diarrhea, vomiting, syncope and great prostration occurred. These effects, and others as serious, were produced in different patients; and even the amount of salivation and perspiration also varied in different individuals.

Successful Cases of Blood Transfusion.—Dr. Santero reported two cases of transfusion of blood. One was in the case of a woman who had cancer of the womb. Both cases were successful—both patients leaving their beds on the expiration of the eighth day.

Dr. Ustariz cited four successful cases; but he does not think that the successful results of the transfusions amounted to anything more than palliatives and tempo-

rary in cases of cancer.

Dr. Catero held similar views. He does not think transfusion anything more than palliative in persons with hemmorhagic diatheses. In such cases, the use of a very small syringe is the necessary instrument in order to inject blood of the proper temperature, and also because it is

more likely by this means to exclude bacteria:

Dr. Montes said that physicians in attendance upon patients were better judges when to use transfusion than those away from patients. No definite rules could apply to all cases. Microscopy and chemistry are important auxiliaries in determining upon the exact treatment to be adopted in individual diseases, while practical experiments form the basis of true progress in medicine.

Hospital Clinics.—(Revista de Medicinary Cirurgia Practicas Madrid.) For Scrofulous Ulcers of the head, neck, arms and breast, the internal treatment consists of iodide of iron and cod liver oil; externally, iodide of mercury and nitrate of silver are applied.

Syphilitic Ulcers.—Internally, iodide of potash and

iodide of mercury; locally, mercurial ointment.

Parasitic Sycosis of the Head.—Rice poultices, depilation and a wash of tar water.

Hemicrania.—Like the treatment of all neuralgias, inhalation of acetic acid vapor for fifteen to twenty minutes.

Chronic Psoriasis.—Forty-five cases were effected by first using prolonged baths until the scales fell off easily, or were easily rubbed off by the finger nail, and then the body was well washed with acetic acid. This, however, produced a smarting sensation for half an hour. It seldom requires more than one bath to effect a cure. Many of the forty-five cases had been subjected to other treatment—as by iodide of potassium, iodide of mercury and arsenic. If the vagina be affected, aromatic wine should be used by injection into the vagina.

Elephantiasis.—Internally and locally by iodine, and by generous diet. Anodyne at night. The dose of the iodine [what preparation?] was gradually increased from twenty to fifty drops. If this did no good, then resort was

had to an ointment of the subnitrate of bismuth.

Carcinama of the Breast.—Extirpation with the knife. Though the immediate result of the operation is beautiful, yet emaciation occurs so rapidly that the patient can not survive many months.

Double Vagina.—Prof. Erich reported a case now under his care, of a double vagina, with two distinct uterine necks, and he believes two distinct uterine cavities, although he has not yet probed to ascertain this. He made the discovery by first getting into the smaller vaginal passage, in which he used forcible dilation. The next examination, he entered the more ample passage, and was surprised at the apparent success of his previous efforts. Similar cases had been seen by other members of the academy.

PILOCARPIN IN EYE SURGERY.—Dr. Chisolm reported his experiences with pilocarpin, the active principle of jaborandi, in eye surgery. Among other cases, he uses it after cataract extractions, to draw the iris away from the incision, and prevent critic hernia. In twenty cases of cataract extraction, in which he has used it in the last two months, the results have been extremely good. One case, particularly, he reported in which fully three-fourths of the vitreous was lost during the escape of the lens, by

spasmodic contraction of muscles. The patient declined using anæsthetics. Dr. Chisolm rarely operates without them. From all past experience, the eye was deemed from necessity a lost one. Pilocarpin was instilled, and the eve bandaged in the usual way. Cold water dressings were constantly renewed, and morphine administered three times a day—the patient being kept under its influence. To Dr. Chisholm's very great surprise, the patient did not have any inflammatory sequlæ. The case progressed in every way as if it had been one of the smoothest of cataract operations. Before the expiration of three weeks, the patient had resumed work, reading with ease ordinary print, No. 4 Jaeger test types, with 21+ lens. The case is the more remarkable as the cataract had been caused by a blow upon the eye, affecting the nutrition of the lens in a man twenty-seven years of age, and was only of a month's duration, commencing to show its clouding soon after the accident.

Complete Obliteration of the Vagina.—Dr. J. Norris reports a case of complete obliteration of the vagina, in a lady who had never menstruated. There was no appearance of a raphe between the labia minora, which were thoroughly fixed into each other. An examination exhibited the presence of a well-formed uterus of normal size. Several cases of a similar nature were reported as occurring in the individual experience of members; also of cases of an allied nature, in which a blind, short cul-de-sac of a vagina had no vestige of a uterus at its upper extremity.

Chronic Aural Discharges.—After the recital of cases, the paper for the evening was read by Prof. J. J. Chisolm, M. D., upon the treatment of chronic aural discharges. He spoke first of the recognition of chronic otorrhœa as an opprobrium to the profession. Physicians feeling their inability in the majority of these cases to check the discharges, often recommend that children be allowed to outgrow them, that the physician may, by this advice, escape annoyance. Dr. Chisolm stated that in his experience, cleanliness alone would cure many of the most obstinate, which were kept up by the decomposed matter being allowed to remain in the meatus, excoriating the middle and outer ear. The mistake constantly made was, that physicians did not instruct patients how to cleanse the ear, and

that an offensive ear always meant a foul one, regardless of the number of times per day it was syringed. A syringe that worked with one hand (a small bag syringe being the best), and warm water were the cleansing means, provided the outer ear be drawn outward, backward and upward, so as to straighten the meatal passage. After this, the usual astringent prescription of sulphate of zinc and carbolic acid, ag grs. iij, to water, 3j, would be found quite effectual. For the very chronic discharges, Prof. Chisolm has substituted, with marked advantage, dessiccating powders for the ear drop; and of all the powders used, he finds alum by far the best. To make the alum powder more volatile, and keep it from caking, he triturates it with a lycopodium powder, one part to six. Since adopting the treatment of thoroughly cleansing the ear, and then drying it with cotton swabs, and finally, puffing alum powder once a day into the ear, he finds the most rebellious discharges from the drum cavity yield kindly. For the past three years, he has been no longer annoyed by aural discharges, however chronic, and he finds them more amenable to treatment than any other class of chronic affections. One great advantage of the alum powder treatment is, that an excessive application can do no harm. After a few applications, he has checked aural discharges of many years' existence. The most convenient method of applying powders to the depth of the external aural passage, and into the drum cavity, through the large perforation in the tympanic membrane, is by means of an insufflator or puff bottle; a quill would, however, answer the purpose.

TREATMENT OF VARICOSE VEINS.—(Mittheil. des Wiener Med. Doctoren-Collegiums, No. 8, 1878.) In one of the numbers of the Transactions of the Wiener Medicinshe Doctoren-Collegiums for the latter part of 1877, Dr. English published a paper on the treatment of hernia by injections of alcohol. The favorable results which he obtained from this mode of treatment in hernia, induced him, he states, to test its value as a method of radically curing varicose veins. He states that this method for the radical cure of varices has the advantage over all others that it is perfectly harmless.

The method which Dr. Englisch pursues is very simple. The vein and a fold of the skin are caught up between the thumb and finger, and a needle of a Pravaz syringe is

inserted in such a way that its point shall be immediately behind the vein. The contents of the syringe, from one to one and a half cubic centimeters of a fifty per cent. sample of alcohol, are then discharged in the immediate neighborhood of the vein. A small knot forms at the point of injection, and very often there is a momentary appearance of contract on in the veins. On the third day there will be a considerable infiltration at the point of injection, which differs according to the irritability of different persons. In individuals who were very irritable there was considerable redness produced, and in four or five cases suppuration ensued. The suppuration was only in the neighborhood of the vein, however; the vessel itself remained sound and healthy. The abscesses were as large as a bean, but gave rise to no trouble whatever. In none of Dr. E.'s cases was there any rise of temperature, though he examined carefully with reference to this point. When the infiltration softened and the swelling subsided a change in the veins themselves became apparent. They were much smaller and harder at the point of injection and its vicinity, and felt like hard cords; and at the sides of these cords very well-marked grooves could be felt.

In a few of the cases a single injection sufficed to cause a complete cure; but in the majority of cases Dr. E. found it necessary to make three or four, and in one person he

made as many as ten injections in both limbs.

The results are most favorable when the affected veins are spread out in the form of a plexus, and the cases are most difficult to treat when the varicose vessels give off a number of branches. The subjective troubles in consequence of the operation are very slight, and only require rest of the limbs.

The duration of treatment varies, . Even in those cases where a complete cure can not be obtained, the efficiency of the palliative means of treatment will be rendered much greater.

The mode of treatment is perfectly harmless, and if it does not succeed the other procedures may then be re-

sorted to.

THE ACTION OF PARENCHYMATOUS INJECTIONS OF ACETIC ACID IN CARCINOMA.—Th. Gies. (Deutsch. Ztchr. f. Chir., 8) calls attention to the value of injections of concentrated acetic acid (one part of acid to three of water) into

the substance of cancerous tumors. In two cases, in one of which the cancer had been removed and had subsequently returned, he made two or three injections daily, using a syringe full each time, and the softening (verjauchung) of the tumor was rapidly caused. When the softening had progressed sufficiently the tumors were cut into, and the ichorous fluid allowed to escape. Complete disappearance of the growths resulted.

BOOK NOTICES.

INJURIES OF THE EYE AND THEIR MEDICO-LEGAL ASPECT. By FERDINAND VON ARLT, M. D., Professor of Ophthalmology in the University of Vienna. Translated, with permission of the author, by Chas. S. Turnbull, M. D., Chief of the Ear Clinic, Jefferson College Hospital. Philadelphia: Claxton, Remsen & Haffelfinger. 12mo. Pp. 198. 1878.

The translator states that the object of the translation of this work is to fill the same gap in American medical literature which the original has so successfully filled in the German. In text-books the references to ocular injuries are exceedingly brief and superficial, while medicolegal opinions, in individual cases, were too sparsely scattered through the archives and other periodical publications to call that attention to the subject which it demands, or to serve as a guide in case such attention had been aroused.

Every variety of injury to which the eye is subject is fully treated of in this work, its results described, and the appropriate treatment set forth. Every physician liable to be called upon in cases of injuries to the eye, should have the work.

For sale by Robert Clarke & Co., Cincinnati. Price \$1.25.

STUDIES IN PATHOLOGICAL ANATOMY. By FRANCIS DELA-FIELD, M. D., Professor in College of Physicians and Surgeons, New York City.

We have on our table the third part, or April number, of this work, which is published in monthly parts at a subscription price of \$5 a year, by Wm. Wood & Co., 27 Great Jones Street, New York.

Each part of the work contains from two to five full page lithographic plates in tint and in color, with accompanying explanatory text. These studies, when completed, will form a treatise on pathological anatomy of exceptional value, especially for the remarkable fidelity of the illustrations, their minute and elaborate detail.

The Part for April is devoted to inflammations of the pleura. It has four beautiful colored plates, exhibiting endothelial connective tissue cells and other microscopical pathological products magnified 750 diameters, with accompanying explanatory text of a very interesting character.

EDITORIAL.

STAUFER'S HARD RUBBER INSTRUMENTS.—In this number appears a small advertisement of "Staufer's Hard Rubber Uterine Instruments," to which we hope our readers will give attention. These instruments, we understand, are becoming quite popular. A nest of speculums of hard rubber is something which every physician ought to have. For full particulars in regard to the supporters, pessaries, speculums, etc., made of hard rubber, send for a catalogue.

TROMMER'S EXTRACT OF MALT we have found beneficial in so many cases of tuberculous and other affections in which it is prescribed, that we often wonder that it is not made use of by more physicians than it is. A good many have never prescribed it at all—others have a few times, and because markedly favorable results did not follow immediately, ceased to use it. We are confident that a little perseverance in its use will convince any one of its merits. Of course, in some cases its effects may not be "striking."

Cor Bovinum.—The Gazette des Hopitaux says Prof. Tourdes (of Nancy) removed, at the medico-legal autopsy of a man who had died suddenly, a heart which surpasses in volume and in weight all recorded cases of cor bovinum. In fact, except one in which the heart exceeded 1,000 grammes (15,434 grains), the cases vary between 500 and

680 grammes. This one reached 1,480 grammes, weighed the day of the necropsy. It still preserves 1,250 grammes of weight after being prepared and placed in alcohol for several days. America still beats this: the heart which Prof. Alonzo Clark presented to the College of Physicians and Surgeons of New York weighing 57 oz.

AMERICAN MEDICAL ASSOCIATION.—The twenty-ninth annual session will be held in the city of Buffalo, New York, on Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, 1878, commencing on Tuesday at 11 A. M.

"The delegates shall receive their appointment from permanently organized state medical societies, and such county and district medical societies as are recognized by representation in their repective state societies and from the medical department of the army and navy of the United States."

Each state, county, and district medical society entitled to representation shall have the privilege of sending to the association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; provided, however, that the number of delegates for any particular state, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association.

Secretaries of medical societies, as above designated, are earnestly requested to forward, at once, lists of their delegates to Wm. B. Atkinson, M.D., Philadelphia, the Permanent Secretary.

Quite a number of changes in the by-laws and amendments, which have been proposed, will come up for action.

It is probable that several railroads will carry delegates to Buffalo and return for one and one-third fare.

CIRCULATION OF WESTERN MEDICAL JOURNALS.—The Clinic, of May 4th, has the following item:

"The American Newspaper Directory for April, 1878, which claims to have good authority for its statements, gives the circulation of Western and Southern medical journals as follows:

"New Orleans Medical and Surgical Journal, 450; The Atlanta Medical and Surgical Journal, 850; Nashville Medical and Surgical Journal, 800;

Louisville Medical News, 600; American Practitioner, 900; Cincinnati Lancet and Observer, 1,800; Cincinnati Clinic, 1,500; Virginia Medical Monthly (Richmond), 1,200; Maryland Medical Journal (Baltimore), 600; Chicago Medical Journai and Examiner. 900; St. Louis Medical Journal, 780; St. Louis Clinical Record, 500; Ohio Medical Recorder (Columbus, 500; Medical and Surgical Journal (Toledo, Ohio), 800; American Medical Bi-Weekly, 1,200; Richmond and Louisville Medical Journal, 2,000."

For reasons best known to itself, the Clinic omits all mention of the Cincinnati Medical News. Upon consulting the American Newspaper Directory and Pettengill's Newspaper Directory, for 1878, we find the circulation of the Cincinnati Medical News stated to be 3,000—just double that of the Clinic.

NEW APPOINTMENTS.—Notwithstanding that during these political times, political qualifications are more regarded in making appointments to responsible positions than capacity, learning, and moral integrity, which alone should be considered in making them, yet occasionally worthy men are placed in positions to which they are suited. A couple of instances of the kind have recently occurred in this city. Within a few weeks Dr. Thomas C. Minor has been made the Health Officer of Cincinnati. vice Dr. Kearney; and Dr. C. A. Miller has been appointed Superintendent of Longview Lunatic Asylum. There is no medical gentleman with whom we are acquainted better qualified for the position he now holds than Dr. Minor. A physician well versed in his profession, possessed of an active and vigorous mind, and well read up in matters pertaining to hygiene, he will certainly make an efficient officer, and do credit to himself, the profession, and the city.

Dr. Miller, being an industrious, intelligent, and humane gentleman, will undoubtedly devote himself assiduously to the performance of his very responsible duties. He has long been a member of the Natural History Society of Cincinnati, and has been noted for his zeal in the cultivation of the natural sciences. We have no doubt that in the discharge of his duties as Superintendent of a lunatic asylum, he will bring to bear the intelligence, industry, and scientific ability which he has heretofore exhibited in other fields.

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PRIGINAL CONTRIBUTIONS.

A Case of Fractured Skull, with Remarks Upon Aphasia and Paralysis.

BY F. M. THOMAS, M. D., SAMANTHA, OHIO.*

On the 2d day of October last I was called to see Mr. A., who had been murderously assaulted on the evening before by unknown parties as he was going home from Hillsboro. Upon examination I found a fracture on the left side of the skull, with a slight depression of bone. The depression extended anteriorly to the coronal suture. The superior border corresponded closely with the temporal ridge of the left parietal bone. It extended posteriorly about two and a half inches from the coronal suture, and the inferior border corresponded very nearly with the superior border of the temporal bone, although encroaching somewhat upon the squamous portion of this Over the seat of the injury there was considerable tumefaction, but no laceration of the scalp, and yet the outlines of the fracture could be traced pretty distinctly by passing the fingers over the part. The injury was received about 6½ o'clock P. M. of the 1st of October, and I did not see patient till 2 o'clock P. M. of the next day. I found him suffering intensely-pulse 120-temperature very high, but not ascertained by thermometer-intense thirst, deglutition difficult-great hyperamia of the vessels of the head and neck-no action on bowels, and but scanty discharge of urine. The tongue was slightly coated; pupils normal. There was complete

^{*} Read before the Highland County Medical Society at its last meeting.

aphasia, but no aphonia, and the patient seemed perfectly conscious of his surroundings a considerable portion of the time.

At times he would lose consciousness; during which he would make violent efforts to get out of bed; and he succeeded several times, but could not stand—would fall to the right side or forward. There was complete paralysis of the right arm, and partial paralysis of the right leg and right side of the face. Gave 10 grains of Hyd. Sub. Mur., and ordered a tablespoonful of the following mixture every two or three hours:

twenty-four hours.

Saw patient again on the 3d, and was surprised to find symptoms greatly improved. Heart's action and hyperæmia very considerably diminished, and patient had become comparatively quiet. The enema had evacuated the bowels pretty thoroughly, and urine had been passed freely. A little food had been taken, but appetite was almost nil. Patient had also slept a little during the night. Still he could not speak a word or move a muscle of the right arm. He could not protrude the tongue. Ordered the febrifuge mixture and cold water dressings to be continued, and an enema to be administered every day.

Patient continued to improve gradually until the 8th of October, when it was observed that he could move the arm slightly, the muscles about the shoulder being the first to show signs of recovery. His fever had almost entirely subsided. His appetite was tolerably good; he was almost free from pain, and he slept very well. He was yet unable to speak a word or read any written or printed matter that might be presented to him, although he has a very good common-school education. He was perfectly conscious, knew all his old acquaintances, and seemed interested in their conversation.

About this time he began to answer questions affirmatively by a nod, and negatively by a shake of the head.

He was able to sit up an hour or so at a time, and would make motions with his left hand, when he wanted water or any thing else within his view. When the children were noisy he would make them understand by his looks and motions that he desired them to be still. About this time he began to make efforts to speak, but he was as ignorant of the art of uttering words as a child who had

never spoken a word.

Former treatment, with the exception of the enemata, was suspended, and the tr. of nux vomica ordered in three drop doses, gradually increased to ten drops three times a day. Patient continued to improve slowly, and in about a week he began to speak disconnected words with considerable distinctness. One very obvious and curious feature of the case was that his ability to speak connected words or sentences and that of reading written or printed matter returned together, or kept pace with each other throughout. While he was yet unable to speak more than a few disconnected words, sentences of written and printed matter were presented to him. He would hold the paper before his eves five or ten minutes at a time, turn it in various ways, study over it, and finally shake his head and give it up, not being able to make anything out of it. Neither could he write a sentence until he was able to speak it. He could make very good letters with his left hand, but he could not form a combination of letters that would make a word. When told to write a certain word, he would take the pencil and proceed as though he were going to write it promptly, but when the pencil would touch the paper he would hesitate, evidently not knowing the letter with which the word began. However, when told what letter to use, he would write it promptly, and then wait to be told what letter next to write.

His power of speech continued to improve till toward the end of the month, when he could talk comparatively well, being able to tell me how he received his injury. He had tolerable good motion of the right arm, but there was considerable want of motion and sensation in the fingers of that hand. He was able to walk all about the farm, and felt very little uneasiness about the head.

The 1st of November patient's appetite was very good, slept well, bowels regular, and the general condition of

the system was good. I discontinued my visits, and in about ten days all treatment was suspended.

A few days ago he was in my office, and the following was found to be his condition: He eats well and sleeps well. His sight and hearing are good. He has pretty good use of the right arm, but not of the fingers of the right hand-has considerable difficulty in getting his knife from the right pocket of his pants. He has considerable hyperæsthesis of the right hand. His recollection of past events is about as good as it ever was. When he engages in very active exercise he feels a slight throbbing sensation under the fracture. When he lies on the left side he feels a swimming sensation in the head. When he looks up and then down very suddenly he has to seize hold of something to keep from falling from dizziness. He can spell pretty well when words are pronounced to him, but in reading, when he comes to a very uncommon word, which he has to spell out, it is with the greatest difficulty that he can make anything out of it. He says he could work pretty well if he could hold things with his right hand. Before he was injured he was a very fluent talker, but now his speech is somewhat halting. He can speak any word, but occasionally a word is thrown out of time a few seconds. Sometimes he uses a word which is not expressive of the meaning he wishes to convev.

Now there are some points in this case which I wish to consider briefly. The injury must have been inflicted with a small and very heavy weapon, covered with something soft; for there was no laceration or incision of the scalp. The bone was slightly depressed, and so completely definable were the edges of the skull adjacent to the depressed portion that to doubt that the skull was fractured was simply impossible. There was some tumefaction of the scalp, but, nevertheless, after a close examination, I was fully convinced that the bone was broken through both tables. The substance of the brain had sustained considerable concussion, and of course the meninges were also severely injured. In this case there was probably such cranial extravasation, producing a small clot, which, together with the depressed bone, produced compression of the anterior lobe of the brain. It is believed by good authority that such clots may exist and be

absorbed without destroying life.

The seat of the injury in this case corresponds very closely with the reputed location of the faculty of articulate language, viz: the third left frontal convolution, and after a pretty careful study of the subject as treated of by recent authors, together with a large number of cases illustrative of the subject under consideration, I am compelled to remain of the opinion that the organs controlling, not only articulate language, but also a knowledge of written and printed language, are situated in that particular locality. And in making this statement I do not wish to be understoad as indorsing the so-called science of Phrenology. Phrenology was propagated and is still supported by a class of persons who are remarkable only for asserting an hypothesis and calling it science without demonstrating fully that it is science. The fact that a certain faculty of the human mind is found to be located in a certain small space in the brain does not necessarily prove that all the faculties have certain and single fixed centers, although this latter may, after the subject has been more fully investigated, be much more nearly true than is at present supposed. Broca, of Paris, says that the portion of the brain in question has never yet been found in a state of disease without more or less impairment of the faculty of language, and that the same can not be said of any other portion of the convolutions.

Dr. William Ogle, Physician to the St. George's Hospital, London, after having had a large experience with cases of brain injury, in hospital and other practice, fully confirms the statement of Broca, and adds that in the records of the St. George's Hospital there is not a single case in which speech was seriously impaired, and the left

side of the brain found sound.

In the London Lancet for January 4, 1873, is an editorial upon the Functions of the Cerebrum, in which the editor remarks, that the now well-ascertained function of the center occupying the third left frontal convolution, is an important fact in favor of the principle contended for by Gall. This remark was called forth by the report of an aphasic case by Dr. Wernher, in Virchow's Archives. In this case of Dr. Wernher the patient had fallen from a wagon and received a fracture of the left temporal bone, with slight depression of bone; also an injury of moderate extent in the left parietal region. This injury gave rise, in about twenty-four hours, to complete aphasia, and

also, as might have been expected, to paralysis of the opposite side of the body. Post-mortem examination revealed the fact that the depressed portion of bone was exactly opposite the middle of the fissure of Sylvius.

Dr. W. H. Broadbent, F. R. C. P., and Physician to St. Mary's and the fever hospitals of London, published a paper upon this subject in the Lancet of February 24, 1872, in which he details a number of cases of loss of speech from injuries to the brain; and in all the cases detailed the injuries were found to be in the left hemisphere of the brain. After treating the subject at considerable length the author concludes with the statement that the cases, so far as they bear upon the question, are all corroborative of the view which assigns a close functional relation with language to the left third frontal gyrus. But he thinks that the faculty of language is not confined to this particular node, but that the immediately adjacent fibers are concerned also in the function.

Dr. L. Waldenburg, of Berlin, communicated to the Berliner Klinische Wochenschrift, 1873, an interesting case of congenital aphasia, in an intelligent looking boy six years old. The mother of this child, when three months gone in pregnancy, was seized with right hemiplegia and entire loss of speech, from which she had only partially recovered when Dr. Waldenburg saw her, six years after. After giving the points of interest in the case, he says: "The case is one of aphasia—disease of the center of speech—an affection of the left hemisphere of the brain." He thinks that the theory that both hemispheres are capable of educated speech is disproved. Here the left hemisphere was affected before the child had arrived at the natural age for commencing to speak, but the right, or healthy hemisphere, did not meet the want.

In the American Journal of the Medical Sciences, of July, 1873, is a paper by Prof. Gross upon the Cause, Diagnosis and Treatment of Compression, etc., of the brain as met with in army practice; and in speaking of certain symptoms being indicative of certain lesions, he says: "Aphasia, associated with right-sided paralysis, points to abscess in the vicinity of the walls of the left fissure of Sylvius. Dr. Gross makes this remark in the particular portion of his paper in which he has the subject of abscess of the brain under consideration. It is claimed by the opponents of this theory that aphasia

sometimes results from injury to the right side of the brain; and we admit that occasionally a case may be found in which an injury to the right side of the head, with no perceptible injury to the left side, is followed by aphasia, with amnesia of written language. We can find on record but one such case, and it is reported by emi-

nent authority as follows:

"A soldier received an extensive injury to the right side of the head by the explosion of a shell. There was no external evidence of any injury to the left hemisphere, yet in a few hours the patient became apharis with rightsided paralysis. Death ensued, and upon post-mortem examination it was found that the wound on the right side was merely superficial, while the concussion of the exploding shell had produced extensive extravasation of blood within the third left frontal convolution and fissure of Sylvius; thus accounting for the aphasia and rightsided hemiplegia without giving the right hemisphere any of the credit. And thus would it always turn out, if those alleged cases of aphasia resulting from injury to the right hemisphere could undergo an autopsical examination. Concussion, in particular, is very likely to produce a lesion in the opposite side of the brain from the point at which the injury is inflicted or seems to be inflicted."

This evidence, together with some excellent papers by Dr. Hughlings Jackson, Dr. Fox, and others, forces us to conclude that if this particular portion of the brain be injured speech will be impaired. We may say that in this particular convolution resides the faculty of language, or that this is the center of the motor ganglia of speech. We may call it what we will, but the fact is patent that any lesion in this portion of the brain is fol-

lowed by impairment of the powers of speech.

Now in this case of Mr. A. the injury was inflicted to the left side of the brain, and we have hemiplegia of the right side of the body. Is this as might have been expected or the contrary? Or have we any guide to assist us in forming an opinion as to where paralysis will appear when induced by certain lesions of the brain?

We think we may predict with absolute certainty where paralysis will appear, if it appears at all, from injury to the brain, if we know what part of the brain is injured. We know that some very trifling hurts—they seem trifling—produce paralysis, while apparently very

serious wounds do not produce it. This is doubtless owing, many times, to the systematic condition or physical make-up of the subject. It is well known that a remarkable decussation of the fibers of the spinal cord takes place at the level of the anterior pyramids or near the base of the medulla oblongata. The fibers of the right lateral column pass over to the left side of the medulla oblongata and so upward to the left side of the brain, while the fibers of the left lateral column pass over to the right side of the medulla oblongata and on to the right side of the brain. Then upon this subject Prof. Dalton says: "If the anterior columns of the spinal cord be wounded at any point in the cervical, dorsal, or lumber region, a paralysis of voluntary motion is produced in the limbs below, on the same side with the injury. But if a similar lesion occur in the brain the paralysis which results is on the opposite side of the body. it has long been known that an abscess or an apoplectic hemorrhage on the right side of the brain will produce paralysis of the left side of the body; and injury of the left side of the brain will be followed by paralysis of the right side of the body." Prof. Gross, in the paper already quoted, starts out by saying that the symptoms of compression of the brain are those of profound insensibility, and paralysis of sensation and motion, as denoted briefly by utter unconsciousness opposite hemiplegia, anæsthesia, etc. The same author, in the same paper, in giving a long list of the symptoms of unilateral arachnitis, places at the head of the list opposite hemiplegia.

In examining a large number of cases of paralysis following injuries of the brain, as reported by various authors, I can not find a case in which an autopsy showed that the paralysis was on the same side with the lesion. Once in a while we read of a case of recovery in which the paralysis was supposed to be on the same side with the injury, but we think the reporters of these cases have all been mistaken as to the true seat of the lesion.

Witness the case already referred to, in which the right side of the head was injured, followed by aphasia, amnesia, and paralysis of the same side of the body. But the autopsy revealed the fact that extensive extravasation existed in the left hemisphere. And Prof. Gross mentions another case, reported by Dr. Ashhurst, in which he patient had received a gun-shot wound with con-

tusion without fracture of the left parietal bone, followed by spasmodic contraction of the left side of the body and death. Upon examination it was found that the arachnoid over the middle right lobe was acutely inflamed, presenting an abundant deposit of soft lymph, while the membrane of the left side was free.

Now if these cases had ended in recovery they would have been shown to the world for the purpose of disproving this well-established principle. In regard to the treatment, I have only to say that when I first saw the case I supposed that surgical measures, for the elevation of the bone, would have to be resorted to in a few hours; but when I saw the patient again his symptoms were so greatly improved that I determined to await further developments. But he continuously improved, and the trephine was not used; and to-day I see no reason why a different course of treatment should have been pursued. I am well aware that there is a difference of opinion among eminent surgeons as to the propriety of surgical interference in those cases of compression from depressed bone. The exposure of the brain or its membranes to atmospheric influence may bring on supurative inflammation in cases which otherwise would have steadily progressed to recovery. I think, however, that as a rule, where the bone is depressed, producing symptoms of compression, the trephine should be used and the bone elevated; but in this case, owing to the condition of the patient and the symptoms presenting, I adopted the conservative plan, and I have been fully sustained by the result.

Instantaneous Cures of Deafness.

Abstract of a Lecture Delivered Before the Ladies' Health Association.

BY W. R. AMICK, M. D., CINCINNATI, O.

We occasionally see a statement where some person has performed what is termed a "wonderful cure of deafness." The patient has had impaired hearing for four or six years, and has been cured in as many days, or perhaps hours. The person who removed the cause, and consequently cured the deafness, takes advantage of this, and obtains a statement from the patient. Then he displays

it to the public under large headlines, "Deafness of six years' standing cured in six days." "Wonderful and remarkable cure of deafness of eight years' duration-entirely cured in three days." "Deafness of nine years' standing permanently relieved in two days." "Read the following statement from the patient, and then come and be convinced that it is true," etc., etc. Now the first questions that naturally arise are, Can it be possible that deafness of five years' duration can be cured in three days? or are the above statements frauds? I might correctly answer both questions by saying, Yes. The last question is directly opposed to the first; how is it then that both can be answered in the affirmative? That deafness of several years' duration has been relieved in a few days or hours. or even minutes, there can be no doubt. When we say it is a fraud, we speak in a general sense, and refer more particularly to the above method of heralding it to the public. The fraud lies in the fact that there is only a certain kind or class of deafness that can be relieved in such a short time. Under such headlines as the above, the people are led to believe that the advertiser is possessed in some way with a peculiar gift for relieving deafness. They also think from such statements that he can cure all kinds and classes of ear trouble, and that he is equally successful in all cases.

There is a certain class of obstructive deafness that can be relieved in a very short time. For instance, a person gets some foreign body in the external ear which entirely fills the canal. This will cause deafness by preventing the rays of sound from passing down to, and impinging upon the membrana tympani. If the foreign body is pressed upon the latter membrane, a very unpleasant sensation is produced; the ear feels full, or "stopped up," and in some cases pain and tinnitus aurium are produced. Thus we see that from a foreign substance in the external canal quite a chain of unpleasant symptoms are developed. This condition of affairs generally continues as long as the particle remains in the canal. In some cases the conditions become modified, and the person becomes habituated to the disturbance thus produced, and pass along about their affairs, giving it little or no attention. If the person is aware of the fact that there is something in the canal, then he can account for the trouble, and also knows that in order for him to obtain relief, the substance must be removed. But if he is not aware that there is an obstruction in the canal, he is at a loss to explain or account for his deafness. If he is not suffering actual pain he does not consult a physician immediately, but defers it from day to day, thinking that it will improve without treatment. After waiting an indefinite period, he finds that instead of improving he is getting worse, and finally consults a physician. The doctor, without giving him an examination, tells him to drop olive oil or glycerine in the ear, and then use some black curly wool that has been taken from the neck of the sheep. He does this with little or no benefit. The trouble continues, and as he did not get relief from the first physician, he tries a second and a third one, and so on until he has consulted a dozen. Finally, the man with the large headlines comes along, and the patient resolves to go and see the wonderful doctor. Now Tollevquack knows enough about ears to examine them, and does not attempt to treat a case without this proper preliminary. He has at least two points that are of great interest to him. First, to get as many cases as possible that are deaf from some obstruction in the external canal, find out by his examination that the trouble is caused by the obstruction, and then inform them of their almost forlorn and hopeless condition (?), with the admonition, "It is a good thing for you that you called on me at this time, for if you had delayed much longer, you would have been hopelessly deaf." The second object is to obtain a statement from the patients, stating that they had been deaf for a certain number of years, had been treated by a dozen different doctors, and finally, when they were on the very verge of giving up in despair, Dr. Tolleyquack, by his superior knowledge, had succeeded in restoring the hearing in a very few days.

Of course the patient would naturally feel very grateful, and it is proper that he should, but any of the physicians first consulted could have succeeded just as well as the latter one, had they examined the ear, found the ob-

struction and removed it.

In this class of cases we frequently find some inflammation of the external canal, and sometimes of the membrana

tympani.

The obstruction may be a foreign particle such as a pea, or bean, or an insect. It is not uncommon for children to put some foreign substance into the ears of their play-

mates. If the particle is small, and well into the canal, and does not cause any special pain, it may be overlooked by the parents. If it is a small piece of metal, or a pebble, it may remain for an indefinite period before any trouble will supervene. If it is a pea, or a bean, in a few days it will be very apt to swell from the absorption of moisture from the canal. If the swelling is sufficient to cause pressure upon the drum membrane and integumentary lining of the canal, it will cause pain, hearing will be greatly impaired, and there will be tinnitus aurium, or a ringing sound in the ear. The pain will direct attention to the ear, and an examination will reveal the nature of the trouble.

The foreign particle frequently acts as a nucleus around which the cerumen gathers, and in time, by the gradual secretion, the canal may be entirely plugged up. The cerumen may itself be secreted in sufficient quantities to

close up the canal.

In all of these cases, before the membrana tympani or lining membrane of the canal have become involved, all that is required is simply to remove the foreign substance. In some cases this is difficult, and can not be done by an inexperienced person. In the more common cases, all that is required is the aural syringe and tepid water.

When the foreign substance remains in the canal very long, it frequently sets up a certain amount of inflammation. This is caused by the pressure producing an irritation of the part, which is followed by inflammation. After the canal has been thoroughly cleansed, then some astringent application can be made to the inflamed part. The trouble generally disappears in a few days.

CASE I.

Deafness of ten months' duration cured in five minutes. May 4. Barbara J.—Æt. 19. Ten months ago she noticed that hearing was impaired in the right ear. Knew no cause unless it was from a cold that she had. Had more or less tinnitus aurium during the entire period, but never had any pain until the last of April, when it was so severe that she could not sleep at night. During this time the tinnitus aurium became more marked. On examining the ear, I found the membrana tympani entirely covered with a black mass, and filling all of the inner portion of the canal. She heard the watch at one inch.

The ear was then syringed with warm water. A very few injections removed the dark mass, which, when examined, was found to consist of a large fly for the nucleus, surrounded with cerumen. As soon as the obstruction was removed, she remarked that the ear felt different, and that she could hear better. When the canal was dried with cotton, she heard the watch thirty-four inches. On examination there was found to be a slight inflammation of the internal portion of the canal, and some redness of the drum membrane. With the removal of the mass, the tinnitus aurium and pain disappeared, and the hearing was restored. Since then she has been entirely free from any trouble with the ear.

CASE II.

Deafness of ten years' duration relieved in fifteen minutes. April 16. Mrs. B.—Æt. 45. More than ten years ago she became deaf in the right ear. Supposed that it came from "cold in the head." During all this time she had suffered from noises and ringing in the ear. This was worse at times, and would "roar like water running over a dam;" then it would change to a "churning sound." About a year ago she noticed that a similar condition of affairs was commencing in the left ear. As the trouble increased in the left ear, and hearing became more impaired, the tinnitus aurium increased until at times she was almost distracted. She had but little pain at any time.

An examination revealed an obstruction in the internal portion of the external canal pressing upon the membrana tympani. Hearing was reduced in the right ear to contact with the watch, and in the left to one and one-half inches.

By the use of the aural syringe, aided with the forceps, the obstructions were removed from the ears in fifteen minutes. Immediately after, she heard the watch at three feet with the left ear, and twenty-eight inches with the right. There was some inflammation of the internal portion of the canal in the right ear, and also along the handle of the malleus. This was treated with astringents for a few days, when she was discharged with normal hearing.

Hepatic Abscess and Some Other Affections.
TRANSACTIONS OF THE JERSEY COUNTY (ILLINOIS) MEDICAL SOCIETY.

BY CHAS. REED, M. D.

THE Jersey County (Ill.) Medical Society met in regular monthly session, May 7th, at the office of Dr. Van Horne, Jerseyville. Dr. Somerell, President, in the chair.

After the transaction of miscellaneous business, Dr. Somerell, who had been elected President at the previous meeting, thanked the Society in befitting terms for the honor conferred. After which, in accordance with the established custom, he proceeded to the discussion of some medical topic, taking as his subject "Hepatic Abscesses," reciting his own experience, and delineating the treatment he had been in the habit of employing. He thought that abscess of the liver could be diagnosed with tolerable certainty from the inception of the premonitory symptoms. The initiatory chill, followed by fever, pain at the top of the shoulder-blade, tongue covered with that peculiar coating indicative of hepatic torpidity, persistent constipation of the bowels, jaundiced complexion, and intense pain over the region of the liver, pointed with almost invariable certainty to hepatic disease, liable to terminate in abscess. The increasing acuteness of this abdominal pain within a circumscribed locality over the region of the liver, would enable the observer, by means of careful palpation, to determine in which of the great lobes of the liver the abscess was located. Hepatic abscesses frequently relieved themselves by extending their (first) adhesive and (second) suppurative inflammation to neighboring viscera. Thus in one case a large hepatic abscess broke into the stomach, and considerable pus escaped into that organ. The pus was discharged from the stomach through the bowels. In another case the abscess had pointed in an opposite direction, and the adhesive inflammation had involved both the visceral and parietal layers of the peritoneum. These adhesions gave way to subsequent suppuration incident to the extension of the abscess, the pus from which having burst asunder the pyogenic membrane, burrowed through or between the muscles of the back, and ultimately found its way into the posterior aspect of the thigh, where it was liberated by the bistury.

In treatment it is never prudent to be hasty. Abscesses of the liver not opened by the bistury never opened spontaneously in less than twenty-four days in the hands of Dr. Somerell.

Dr. Williams called attention to the difficulty of differentiation between abscess of the liver and abscess occurring in other organs in the vicinity, and stated that in view of such difficulty a failure on the part of young practitioners to properly diagnosticate these cases should not be held as culpable.

Dr. Somerell recited his method of differentiating, in which he took the localized pain with tumefaction as

guiding symptoms.

Dr. James, of Montgomery County, Ill., suggested that in one of the cases related by Dr. Somerell the pus might have escaped from the abscess sack in the liver into the gall bladder, and from thence reached the alimentary canal through the *ductus communis choledochas*, and appeared to think that had the pus passed into the stomach it would have been vomited out, instead of passing through the bowels as related.

Dr. Charles Reed related a case that occurred under his observation, the clinical conditions and pathological peculiarities of which were calculated to support Dr. Somerell's diagnosis of hepatic abscess opening into the stomach, and the pus being carried off by the bowels.

A German woman, aged 54, had been complaining of indigestion and pain in the epigastrium for some time; pain under the shoulder-blade, brown furred tongue, gastric flatulence, persistent constipation, jaundiced complexion, tumefaction of four by five and a half inches in the epigastrium, temperature $100\frac{1}{2}^{\circ}$, was her condition when first seen by my father, Prof. R. C. S. Reed, of the Cincinnati College of Medicine and Surgery. The tumefaction in the epigastrium became gradually more extensive, and the pain in the same region grew correspondingly more intense. At this point my father diagnosed malignant disease of the stomach, with probably other visceral complications. About six weeks after this time the tumor in the epigastrium became soft and fluctuating; it was tapped by the aspirator, yielding about four ounces of dark, offensive, saneous pus. Four days after this time the abdominal wall gave way to the extended suppurative process at the point of puncture, giving a free, fistulous communication with the abscess cavity, which, it was determined, was located in the liver. From this time on the patient received scarcely any nourishment; and this from indisposition to eat, rather than inability to retain food after it was once ingested. About four weeks from this time the patient died. And thirteen hours after death an examination of the abdominal viscera afforded the following results: A triangular opening was found in the abdominal wall, an inch and a half above and a half an inch to the right of the umbellicus. Through this opening a probe could be dropped to the depth of four and a half inches in the direction of the right hypochondriac region. The abdominal cavity was opened by a curvilinear incision carried from the false ribs of one side downward and around to the false ribs of the opposite side. On endeavoring to raise the flap thus formed we found that it was adhered to the liver by means of a rudimentary abscess sack of the probable capacity of a fluid ounce. This abscess sack communicated with a series of cavities located in the right lobe of the liver. The liver was so enlarged and fatty that it occupied, in addition to its natural habitat, the entire epigastric, part of the umbellical and part of the left hypochondriac regions. On endeavoring to raise the liver we found that it was adherent to the fundus of the stomach. This adhesion yielded to slight force, and an opening in the stomach was thus made, of irregular shape, but probably an inch and three quarters in diameter. This was surrounded by clusters of scirrhaus tissue. The part of the liver corresponding to this opening in the stomach was excavated to the depth of nearly an inch, and the interstice between this excavation and the abscess cavities previously described was hardly a quarter of an inch in thickness. The stomach contained about ten ounces of an offensive, dark, chocolate-colored fluid, such as is generally ejected in scirrhous disease of the stomach.

Now here was a case of hepatic disease presenting two points of tissue distinct in one, an abscess in the right lobe that pointed anteriorly and found exit through the abdominal wall; the other, a center of destruction from malignant disease, in which the stomach was involved, and in which the products of suppuration were discharged into the stomach; and yet there was no vomiting. Why? Simply because the muscular wall of the stomach had be-

come so atrophied that the organ could not perform the act of vomiting. The peptic glands were likewise in an

atrophic state.

Dr. Williams called attention to the alarmingly increasing frequency of pulmonary tuberculosis, and urged upon the Society the importance of carefully noting the history of all such cases, and the special importance of noting the early history of all such cases. There are, Dr. W. believes, certain clinical phenomena manifested in these cases that will enable the practitioner to diagnose them before the physical signs become clearly developed. The one important condition indicative of the tuberculizing process taking place in the lungs is the constant elevation of temperature to $101\frac{1}{2}^{\circ}$ to 102° Fahr.; and this state of the temperature may be taken as confirmatory when coupled with pulmonary symptoms. In seven cases had Dr. W. been enabled to predict the tubercular process before lung consolidation had taken place.

Dr. Williams then adverted to the trouble he had recently experienced in cases of abortion, and related one case that had taken place at four and a half months utera gestation. He arrived three hours after the delivery of the fœtus, which had been effected with the loss of but little blood. On examination he found that the placenta had not yet been discharged—the cervex was elongated to the extent of two inches—the external os was in a dilatable condition, but the internal os was so rigidly contracted that it refused to either dilate or be dilated by anything short of mechanical means, which latter were not employed. Dr. W. asked the members of the Society

what they would do in such a case.

Dr. Duhadway related a case of threatened abortion at four months, in which the os presented a condition somewhat similar to the case related by Dr. Williams. An Eclectic physician was in attendance when Dr. D. was called, but relinquished the case, which had been bleeding so profusely that syncope was threatened. An examination revealed the cervex elongated—the external os dilated—the internal os rigidly contracted, with a rigid, rope-like ring just external to it. In this case I avoided instrumental interference, and, notwithstanding the fact that the parties interested demanded a delivery I declined and let the case alone—the consequence being that at this time, four weeks after my first visit, the rigid

ring has disappeared and the os, in its natural condition, is enabling the uterus to retain its contents. Now arises the important inquiry, What caused the external os to dilate and the internal os to so rigidly contract? What caused the cervex to assume the peculiar funnel shape that I have described? Such a condition of the cervex might be produced by means of a sponge tent that had not been introduced beyond the internal os, as these tents, after being permitted to remain in for some time after their expansion, cause considerable irritation. If one were imperfectly introduced, as I have indicated, its expansion would occasion the dilatation of the external os, but its irritant influence would effect the contraction of the internal os. The Eclectic physician aforesaid, after my connection with the case, advised the parties to "have it done right away," as the case was one of placenta præviæ, and that delivery at full term would imperil the woman's life beyond the hope of recovery.

In reference to treatment in cases like that reported by Dr. Williams, Dr. Duhadway stated that he once had a similar case, in which he had failed to secure dilatation of the os, although he had produced complete relaxation of the general system by means of belladonna and chloral and chloroform; and he continued to fail to overcome the rigidity of the os by any means of medication until the fourth day, when the os relaxed, perhaps spontaneously, rather than from the effects of any remedy that he had administered. In this case the placenta came away intact, presenting but slight evidences of decomposition.

Dr. Williams was glad Dr. Duhadmay was outspoken in favor of letting these cases rest, as he thought that was the best treatment; but at the time of his graduation, and for several years subsequent thereto he had practiced under the idea that the placenta should be removed after a certain brief space of time, whether or no—all for the purpose of averting supuchemae, etc. But in these days of disinfection the after-birth could be permitted to remain with impunity for several days. Two things, however, should be looked after—the parts should be carefully disinfected, and kept moist.

Dr. Gill stated that he had frequently received censure for permitting the placenta to remain for some time in these cases of abortion and premature delivery—as the notion appeared to obtain among the people that the prolonged retention of the after-birth was fraught with great hazard to life. In these cases of retained placenta during the early days of utera gestation, it is always proper to avoid decided interference, as there is sufficient circulation in the placenta to prevent its rapid decomposition. My plan is to introduce an alum-plug, and leave it there for twenty-four hours. No decomposition can go on where there is a strong solution of alum. In the course of thirty-six hours the placenta will most probably be expelled.

Relative Caliber of Trachea and Bronchi.

TRANSLATED FOR THE "MEDICAL NEWS" BY R. B. DAVY, CINCINNATI, O.

On April 23, at the Academy of Medicine of Paris, M. Mark Lee read a work on the relative caliber of the bronchial tubes and trachea. Rehearing the anatomical measurements and considerations which Cruveilhier, Sappey, and Berrier-Fontaine have admitted in their different treatises, the author believes it safe to regard the bronchial tree as a cylinder, and not a truncated cone. The researches which he has just made lead him to the following results:

- 1. The mean diameter of the trachea is generally larger in males than in females; the subjects being of the same age. It increases with age. It was of $3\frac{1}{4}$ millimeters in a fœtus of $7\frac{1}{2}$ months, and at birth it varied between 4.12 and 5.6 millimeters. At the age of two years it was 7.5 and 8 millimeters; and from 4 to 7 years, 8 to 10.5 millimeters. Above twenty the figures varied, for the masculine sex from 16 to 22.5 millimeters, and for the feminine from 13 to 16 millimeters. The mean for 21 adult males was 18 millimeters, and for 12 adult females 14.5 millimeters.
- 2. The mean diameter of the right bronchus in subjects under 20 years varied between 11.75 and 17.5 millimeters. The mean of 18 males was 14 millimeters, and that of 12 females 12 millimeters.
- 3. The mean diameter of the left bronchus in subjects above 20 years was between 7 and 13.5 millimeters. The mean of 18 males was 11.6 millimeters, and 12 females 9 millimeters.
 - 4. The square of the diameter of the trachea, compared

with the sum of the squares of the diameters of the bron-

chi were equal in twenty five cases.

These cases comprise: (a) all the subjects, thirteen in number, of both sexes above twenty years, with the exception of a boy of four, dead of croup, in whom the caliber of the trachea gained notably on the combined caliber of the two bronchi; 72.25 against 52.60 millimeters. In almost all these subjects the lungs were healthy. A boy of five years died of tubercular pneumonia, and two others of the same age succumbed to croup; (b) twelve subjects over twenty years of age, eight of which had healthy lungs, and among these there was an old man of eightysix; the four others were a man of twenty-one, and a woman of thirty who died of tubercular phthisis, a man of thirty-two, affected with suppurative pneumonia, and another of forty-five with dilatation of the bronchial tubes.

The same equality was exhibited in dogs and sheep

which M. Jee examined in this particular.

5. The caliber of the trachea was inferior to the sum of the two bronchi in eight subjects, among which, five presented a very extended tuberculization of the lungs; the three others, two men of sixty-two and sixty-eight years, and one woman of twenty-seven had healthy lungs.

6. Finally, the caliber of the trachea was greater than the combined caliber of the two bronchi in eleven subjects, as follows: the little boy who died of croup, three emphysematous subjects, four tubercular ones, of which one had pulmonary emphysema, one subject with healthy lungs, one man with caseous pneumonia, and one whose lungs were not examined, with whom the difference was very trifling. The conclusions from the work are as follows:

1. In the normal condition the combined caliber of the

two bronchi is equal to the caliber of the trachea.

I can add that, after the small number of measurements I have made, the combined calibers of the bronchial subdivisions are equal to the bronchus from which they spring. The respiratory passages represent then a cylin-

der, and not a cone.

2. In a diseased condition the equilibrium between the capacity of the trachea and that of the bronchi can be disturbed, whether it be in favor of the bronchial tubes as in chronic tuberculosis, or to that of the trachea as in emphysema.—Le Progres Medical of April 27, 1878.

The Milk of Consumptive Cows.

TRANSLATED FOR "MEDICAL NEWS" BY R. B. DAVY, M.D., CINCINNATI, O.

This subject was lately brought up at the Society of Public Medicine and Hygiene, of Paris, and seems to have created some anxiety. The *Tribune Medicale* of April 14 says: "If the title of M. Vallin's communication, 'Can the Milk of Consumptive Cows transmit Tuberculosis?' could frighten some persons, the communication itself is of a nature to reassure them.

This work, indeed, in the intention of its author, has no other object but to locate the question and point out the actual state of science on a pretty obscure point in etiology. It contains a resume of opinions expressed up to the present day by the savans of all countries, especially French and German, and a programme of experiments which the honorable professor of Val de Grace proposes to institute in order to convince himself. M. Vallin appears to lean already to the opinion which admits the possibility of transmission of tuberculosis by the milk of phthisical cows. When he recalls the works of such and such an observer, who shares the same opinion, it is with a complaisance, which is not met with enough, perhaps, in contrary cases, that he speaks of experiments made; of rigorous or favorable conditions; of the excellence of the processes employed, and of the merit and erudition of the experimenter. M. Vallin involuntarily betrays himself here.

And, nevertheless, after having listened to him closely, we ask ourselves what conclusion is to be arrived at, and frankly avow that we are more inclined to the negative than the affirmative one. M. Vallin shows us, indeed, that those experimenters which affirm are more numerous than those which deny; but this argument is only slightly applicable because the fact on which it depends is of little value. It is for those who believe in the affirmative to make the trial, as the least negative experiment, if conducted with sincerity, can advantageously combat all the facts opposed to it. So far as the intentions of M. Vallin to devote himself to these new researches are concerned, we can only praise them, and wait for results. The attainments and ardor of the young professor causes us to believe that, after a given time, he will bring to the So-

ciety of Public Medicine something worthy of very serious consideration.

For the present, however, the public may be reassured on the subject of danger from phthisical cows. M. Vallin relates that he has taken all the trouble in the world to discover them in the Parisian dairies. The proprietors showed the greatest astonishment imaginable as he went from stable to stable prosecuting his inquiry. "We have no cows here which cough," was the universal reply; and this for the simple reason that they cost the same as others, and yield two or three times less profit. Furthermore, the Inspector of the Grenelle slaughter-house, in answer to a question, stated that out of 25,000 cows slaughtered in 1877, only 25 or 30 were found to be affected with phthisis. For the present, then, Parisians sleep in peace.

The rabbit was the subject of the short discussion which followed. This animal has been the subject of almost all the experiments undertaken so far, and the fact that it is so liable to tuberculosis should be understood. A damp place and insufficient nourishment is enough to produce the disease. "This animal," said M. Gubler, jokingly, "only asks to die, and seeks the very first pretext to fall sick." It is necessary then to weigh this fact in all experiments of which the rabbit is the subject.—La Tribune Medicale,

April 14, 1878.

SELECTIONS.

On the Treatment of Phthisis.

BY C. BOTH, M. D., NEW YORK.

On one or two occasions I have presented to the profession a treatment for tubercular phthisis, which, in my hands, has proved very successful. In continuing my remarks upon the subject I desire to place upon record some additional cases. As a proper introduction to the details of such cases it becomes me to allude in the briefest possible terms to the methods pursued by me. I may here remark that they have already been presented to the profession, but believing that many may not be acquainted with them, I allude to them in this connection. The method, as a whole, may be divided into three di-

visions; first, that referring to mechanical treatment; second, that referring to digestion and assimilation; and third, the introduction of soluble lime to invite the calcification of the tubercles. Now, in reference to mechanical treatment, I may remark that the principles upon which it rests are simply as follows: From the fact that no lung can heal until previously cleared of phlegm and pus, and accessible to air, I endeavor to bring the muscles of the throat in such a condition that they can be used as a pump to draw the air forcibly into the finest passages by suction—thus, by the repeated rushing in and out of air, they get cleared, somewhat in the manner of a rolling sea washing a rocky shore. I have advocated for this purpose three exercises, which follow each other as the strength of the patient increases, and which are described in full in the Medical Record of July 21, 1877. These manipulations have for their aim the clearing of the bronchioles and alveoles of phlegm and pus; the reestablishment of capillary circulation and respiration in the affected lung portions, and the stimulation of cellular

activity generally.

My next point is the establishment of perfect digestion, assimilation, and excretion—it being the object to secure the quickest possible change of matter consistent with the preservation of the balance of absorption and excretion. All the points established by physiological chemistry come here into play, forming the most difficult part of the treatment, inasmuch as we have to consider the chemical transformations of certain food, not only under normal, but also under pathological conditions of glands, and of the blood itself. The diet is, therefore. a different one in each case, and varies again as the case advances. Thus, in the case of a patient whose blood is dark purple from want of proper oxidation, and for the chemically abnormal constitution of the albuminates, it would not be advisable to give him easily digestible, nitrogenous food; but we must manage to use up the old material first the best way we can, and then add, gradually, better substitutes in proportion as the effete matter becomes more oxidized and excreted. The object of diet is not to find the most nutritious or most digestible, but such food as will digest according to the quickness or slowness of the assimilating power in the individual. A specified diet, then, is required; but the individual reasons therefor can only be explained in a given case. Some of the main points in this regard have been published in the *Medical Record* of December 15, 1868, and of February 17, 1877.

The natural healing process of tubercles, or decaying cells in the body, is their transformation into a cretaceous mass, or calcification. We have, therefore, to furnish the blood with the salts necessary for this purpose, in such a form that they can be assimilated. These salts are, especially the carbonates, silicates, and phosphates of lime in their organic combination with albumen, which we find in both the vegetable and the animal kingdoms. Too strong heat in cooking destroys this combination, and renders the salts insoluble, and consequently unfit for assimilation.

I finally pursue a general regimen which brings the patients under the influence of all those natural resources which are known to increase cellular activity—such as ozone, sunlight, etc. They sleep with open windows in summer and winter, and go out every day. The clearer and fresher the air the better—so important is this outdoor exercise that I insist that my patients go out in rain, snow, dampness, and even in night air and dew. I have had no instance for twenty years where a patient "caught cold" from such exposure. I only guard consumptives against strong headwinds and extreme hot weather. Hot and damp weather favors the development of tubercles; they spread quickly through self-infection from softening. The depressing influence of heat on the nervous system seems to be the direct cause of this.

If these four points are brought to bear, properly, upon consumptives, the result is such as may be seen in the short report of six cases treated for advanced phthisis within the past two years. All had been under the best known therapeutical or climatical treatment with the best physicians, and they came to me apparently without any hope left for them. It will be found that I have even over-reached my former percentage of sixty saved. I lost one; the prognosis of one is yet doubtful, while four are again in active business. They were treated as they came, without selection.

Case 1.—Mr. W. H., a native American, of Yonkers, merchant in New York City, began treatment in October, 1876; twenty-eight years old; had lost a brother and a

sister by consumption in 1875. Had been sick for ten years, and had to give up all business for the last two years. Regular patient of Dr. C. P. Tucker, of New York, in consultation with Drs. A. Flint and A. Clark. Had tried Minnesota and Colorado, also the out-door-tent living, and the South, with injurious results.

Examination denoted a cavity of two inches by four inches in right apex; whole of right lung tubercular; four inches of exudation in right pleura. Left upper lobe tubercular with subcrepitant rale. Pulse 124 after rest;

feverish.

Although I was unable to give him much encouragement, he nevertheless resolved to submit himself to treatment. In the course of a few months the cavity began to diminish in size, when I discovered another one below it. On the 1st of August, 1877, he resumed active business; in which he has not missed, thus far, a single day. In the same month he was re-examined by Dr. A. Clark, which examination proved a very satisfactory one for him. His condition is now: Left lung calcified; expiration denotes former tuberculosis. Exudation in right pleura is gone. Upper cavity about the size of a hen's egg, which probably will remain so for life. Lower cavity also diminished in size. Respiration has been established around both cavities. Pulse in bed 68-varying, 20; higher in daytime. Patient appears strong, active, and, at present, is traveling in business .-

Case 2.—Mr. Herm. B., a native of Hamburg, merchant in New York; twenty-four years old; lost a brother by consumption in Madeira, in 1875. Soon after, on an extended pleasure trip through Colorado, California, and Mexico, he was attacked several times in succession by hæmoptysis; was treated by Dr. Pregitzer, of Staten Island, in consultation with Dr. Schnetter, of New York, who sent him to Aiken, S. C. Returned from Aiken much reduced, when Dr. Schnetter advised him to live in winter at Pau, France, and in summer at Davos, Switzerland. With his steamer ticket in his pocket, he consulted me in October, 1876, being informed by his physicians that he would not live till February next if he ventured to

remain in New York.

Examination denoted tubercular induration in both apices—left side down to fifth rib, right to third. Pulse 135 after rest. Nervous system very irritable and weak.

Had all the signs of acute tuberculosis; threw up his food, etc.

After a few days' treatment his pulse sank to 112; then to 104, where it remained steady for three months. During this time a cavity was detected between second and third ribs on left side, of the size of a pigeon's egg. I had promised him to be able to visit Germany in June, to relieve his anxious parents. He left New York on the 24th of May, traveled through Germany and Switzerland, and returned to New York in October, 1877. Since then he has been steadily in active business. His condition is as follows: Right lung perfectly healed and calcified. The cavity in left side is not yet cleared, which compels him to cough and expectorate in the morning. In November, 1877, I walked with him from 51 New Street to Twenty-seventh Street and Seventh Avenue, in fortyfive minutes, and he was chatting all the way without cough or fatigue. His pulse is now sixty in bed, and eighty in daytime. Dr. Lellmann, of New York, examined this case before and after the voyage to Europe. I also presented him once to Dr. L. A. Savre, of New York. It is probable that he will be completely cured before next summer. I must state that when I first saw him he was unable to walk ten blocks.—Medical Record.

A Physician's Experiment.

[FROM "NATURE."]

At a public lecture at Salisbury Hall, Oxford Street, recently, Dr. T. L. Nichols, of Malvern, related particulars of a "dietetic experiment" upon himself which he made with a view to solving a difficulty as to the quantity of food per diem which would best sustain health. He began on November 5, his food being chiefly bread, fruit, milk and vegetables. During the experiment he had taken no flesh meat, wine, beer, spirits, tea, coffee or tobacco. With regard to smoking, if it were the good thing people said it was, why not encourage their wives and daughters to smoke? Medical authorities differed as to the quantity of food that should be eaten, and it was a common belief that the more food we ate, the greater would be our strength.

The first week, the lecturer stated, he lived on bread,

milk, fruit, and vegetables, the total weight being 3 lbs. 9½ oz., costing 3s. 1d., i. e., a daily average of 8 3-14 oz., costing 5 2-7d; this was slightly below his standard of 6d. a day. He felt better and clearer and brighter than usual. The second week he studied quality rather than cheapness, his food being Food of Health, milk and fruit. Total weight, 4 lbs. 4½ oz.; cost, 3 s. 8d., average, per diem, 9 5-7 oz., costing 6 2-7d., and nothing could have been better, physiologically, than the effect of that food upon him. His digestion was simply perfect and the action of the whole system as good as it could be. He then discontinued milk as unnecessary. For the third week the total amounted to 3 lbs. 2 oz., equal to 1s. 9d., giving an average of 7 1-7 oz. of food, costing only 3d. per day. Milk was not so cheap for food as Gloster, Dutch and American cheese, because they had to pay for the water it contained. Doctors recommend two or three pounds of food daily to repair the waste of the system; but he asserted that the waste of brain atoms and nerve force could not be measured. The food eaten had to be disposed of at great cost of life and strength, and he believed the wisest plan was to eat the smallest quantity that would properly support the body. The fourth week, his food being similar, weighed 3 lbs. 6 oz., costing 1s. 2½d., giving an average of 8 oz., equal to 2d. per day. He considered 8 oz. the minimum, and 12 oz. the maximum quantity of food that should be taken per day. The total weight of his food during the four weeks was 14 lbs. 6 oz., costing 9s. $3\frac{1}{2}$ d.; average per week, 3 lbs. $9\frac{1}{2}$ oz.; per day, 8 oz.; costing per week, 2s, 5d., and per day 4 1-7d. He then added soups, puddings, eggs, etc., and the fifth week his food weighed 3 lbs. 12½ oz., costing 3s. 4d., being at the rate of 8 4-7 oz., at 5 5-7d. per day. For the sixth week the figures were 63 oz., at 2s. 1d., or 9 oz. at 3 4-7d. per day. He had taken the diet without stimulants and had experienced a constant increase of health and strength and power to work, and his weight had remained at about 12 st. 2 lbs., except that at the end of the fourth week there had been a slight decrease which had since been recovered. The experiment has been fairly made upon an average subject, and the results were satisfactory. He was convinced that they ought to give rest to the stomach, and that this would cure all cases of dyspepsia. The diet question was at the root of all diseases. Proper attention

to diet would reduce the rate of infant mortality, and remove many diseases. If the drink of a nation were pure and free from stimulating qualities, and the food was also pure, the result would be pure health.—Daily Graphic.

Amputation of the Penis.-Transplantation of the Urethra.

THE ordinary method of amputating the penis is always followed by the great inconvenience that the patient can not urinate in the erect posture without wetting his clothes. Prof. Thiersch has successfully overcome this difficulty by transplanting the remnants of the urethra into the perineum. In the case operated upon, the whole organ, from the urethral orifice to the root was the seat of one large ulceration, surrounded by hard, raised and everted margins. The urethra was exposed to the extent of two centimeters; in the inguinal regions existed a number of hard, indolent, enlarged glands. The penis was amputated at its root. From the lower margin of the wound an incision was then carried along the scrotal raphe into the perineum, dividing the scrotal sac into halves. By deepening the incision the urethra was reached and dissected off its surroundings toward the bladder to the length of two centimeters. The urethra was then turned down to the perineum, and fastened to it by stitching the mucous lining to the external integument. Catgut satures were used to close the wound; drainage tubes were put into both angles of the wound; a flexible catheter was kept in the transplanted urethra, and salicylated dressing applied. Three months after the operation he was discharged from the hospital. He could then, by raising the scrotum, discharge the urine at an angle of forty-five degrees, in the erect posture, without soiling his clothes or body. A reexamination of the urethra, made a year later, showed the condition of the transplanted urethra, and its satisfactory function still unchanged.—Detroit Lancet.

Investigations on the Local Effects of the So-called Astringents upon the Blood Vessels.

Dr. H. Rosenstein (Wuerzburg, Phyr. Med. Verhalg., 1876) examined the effects of solutions of argentum nitri-

cum, plumbi acetas, acidum tannicum, gallicum and pyrogallicum, ferrum sesquichloratum and alumen by applying them to the mesentery of curarized frogs, and measuring the caliber of the affected vessels with the micrometer. The most powerful contraction was produced by nitrate of silver in a solution of one to ten per cent., the observations being often disturbed by the ensuing partial opacity of the tissues. The contraction, in many cases, involved one-half of the lumen, both of the arteries and veins, being less marked in the capillaries, and manifesting itself in the course of a few seconds. R. observed a stoppage of the circulation in the affected vessels, which was permanent in the capillaries, but at times only transitory in the arteries and veins. Tannic acid, contrary to expectations, was found to have the opposite effect, dilating arteries, veins and capillaries as much as one-half of their caliber, while they became at the same time choked with blood corpuscles. The dilated vessels immediately contracted on the application of nitrate of silver. Gallic and pyrogallic acids were found to have the same effect as tannic acid. Acetate of lead produced a contraction of the arteries and veins, though less markedly than nitrate of silver. Its effect could not be traced to the capillaries. Occasionally, a stoppage of the circulation was observed. The vessels almost invariably contained white coagula, consisting of conglomerated, colorless blood corpuscles, often adhering to the walls of the vessels, and thus giving to their transverse sections a beaded appearance. A ten per cent. solution of liquor ferri sesquichorati had no perceptible effect. A fifty per cent. solution caused a contraction of the vessels, though in a still lower degree than acetate of lead. This contraction was limited to the arteries and veins, while the capillaries remained dilated. A frequent result was coagulation and discoloration of the blood within the vessels. A discrepancy was observed in the results of the various experiments with alum solution. The vessels were in some cases contracted, in others dilated; while in others again, no appreciable change was noticed. In the capillaries, especially the smaller ones, the circulation often ceased. In order to prevent reflex action, he extirpated the spinal column of the frog, and destroyed the communication between the vessels and the heart, without changing in any way the local effect of the substances above mentioned. From the results of

these experiments the author infers that only nitrate of silver and acetate of lead can be said to exert an astringent action, i.e., to cause contraction of the tissues, this effect being of uncertain occurrence in alum, and the liq. ferri sesquichlor., and entirely absent in the tannic acid group.—Toledo Med. and Surg. Journal.

Employment of Anæsthetics in Labor.

M. PIACHAUD read a paper before the International Medical Congress of Geneva (Gaz. Medical.—Med. Record), in which he advanced the following conclusions:

1. The employment of anæsthetics is, as a general rule,

advisable in natural labor.

2. The principal substances which have been used for this purpose up to the present time are ether, chloroform, amylene, laudanum, morphia hypodermically, chloral by the mouth and by injection.

3. Of these chloroform seems to be preferable.

4. It should be administered according to the method of Show, that is, in small doses at the beginning of each pain, its administration being suspended during the intervals.

5. It should never be pushed to complete insensibility, but the patient should be held in a state of semi-anæsthe-

sia, so as to produce a diminution of the suffering.

6. The general rule is never to administer chloroform except during the period of expulsion; but in certain cases of nervousness and extreme agitation it is advantageous not to wait for the complete dilatation of the os.

7. Experience has shown that anæsthetics do not arrest the contractions of the uterus or abdominal muscles, but that they weaken the natural resistance of the perineal

muscles.

8. The use of anæsthetics has no unpleasant effect on

the mind of mother or upon the child.

9. In lessening the suffering, anæsthetics render a great service to those women who dread the pain; they diminish the changes of the nervous crises which are caused during labor by the excess of suffering; they make the recovery more rapid.

10. They are especially useful to calm the great agita-

tion and cerebral excitement which labor often produces

in very nervous women.

11. Their employment is indicated in natural cases until the pains are suspended or retarded by the suffering caused by maladies occurring previous to or during labor, and in those cases where irregular and partial contractions occasion internal and sometimes continuous pain, without causing progress of the labor.

Proceedings of the Evansville Medical Society.

THE Society held its regular monthly meeting on the evening of April 1, 1878, at the office of the Secretary.

Dr. J. W. Compton, President, called the meeting to order, and after the reading of the minutes and other preliminary exercises, Dr. Achilles presented to the Society a fœtus, sent to him by Dr. A. Fahrer, of this county, destined for the Museum of our Medical College, together with a letter, describing the particulars of its delivery, and a few comments thereon. Being of some interest to the profession, it was brought to the notice of the meeting, in connection with Dr. Fahrer's statement. The fœtus was much flattened, and exhibited a development of four and a half or five months' gestation, and was delivered by Dr. Fahrer, in company with another mature and living child. The matured infant weighed eight pounds, its head being rather larger than usual. While attending to the delivery of the placenta, he discovered the presence of the unmatured fœtus in gestation. This exhibited, besides the flattened condition of head and body already referred to, a freshness of the skin, without the least sign of decay, so that it was thought that the blood had circulated through the system quite recently; but no pulsation of the heart was perceptible. The flattening had taken place, according to the opinion of Dr. Fahrer, during the protracted delivery, and he supposed that the fœtus must have been pressed between the walls of the uterus and the head of the larger child. The mother is forty years of age, of medium size, and a tolerably well-set, strong woman; her sexual organs normal. She was the mother of seven children, and had previously good deliveries.

The birth of the mature child in this case, according to her computation, occurred at the proper time, and she

stated, that she had never felt so well as during the recent pregnancy.

EXTRA-FŒTATION.

Dr. Achilles remarked, showing the specimen: This is the fœtus in question. If it is a child of four and a half months, for which view all the parts speak so clearly, and which, according to Dr. Fahrer, could not well be disputed, it must have been conceived at a time when the other fœtus had completed one-half of its intra-uterine existence. In other words, is it a case of superfœtation, or is superfœtation under the circumstances at all possible?

Dr. Fahrer, judging from the freshness and general appearance of the fœtus at the time of the delivery, does not believe that it is simply a case of tubal pregnancy, with one normal child, and the other, from some unknown cause, having its development arrested; and, although he considered superfœtation an impossibility on physiological grounds, his opinion in the matter has been completely shaken by the present case, in which he now submits to the consideration and judgment of the profession.

Dr. Compton said, that the case, as described, gave more indications of conception having taken place at the half, term of a previous pregnancy, than any he had seen. The specimen remained, as you observe, as flat as a man's hand, but if circulation of blood had been maintained up to within a few moments of delivery, as the freshness and redness of the skin would indicate, and the specimen had recently a rounded shape, the natural elasticity would have caused the rounded shape to return shortly after the removal of the pressure that caused it. If you admit that superfectation may take place in some unoccupied part of the uterine cavity, that part would most likely be near to, and about the uterine neck, the point probably occupied by the child's head of the first conception, so that the specimen may have been flattened by the pressure during the early months, while the tissues were soft and yielding.

Dr. Day stated that though believing the specimen on exhibition to be nothing more than a twin fœtus, the growth and development of which was arrested in the early weeks of its existence, probably by some adverse condition of its umbilical cord or placenta, he thought the medical gentleman who had sent it in (Dr. Fahrer), was not assuming an

impossibility, in his belief that the specimen is the fruit of a superfectation at five months, though such a phenomenon might not happen once in hundreds of years the world over. When we reflect on some of the conditions admitting of superfectation, we can readily see how it might happen, even at a late date, or during any period of utero-gestation. Of these conditions ovulation and vivification only are required. Who shall say that a woman who menstruates during utero-gestation, instances of which many of us have seen, is not ovulating as certainly as she did in the unimpregnable state? Though in asking this question I do not wish to be asserting a belief that ovulation attends every menstrual epoch. And who shall say that when the natural avenues are open to the passage of the menstrual fluid under these circumstances the spermatoza can not ascend? We know that hidden physiological conditions stand a bar to such an anomaly in reproduction, just as they stand to abdominal and tubal pregnancy, to the production of plurality of fœtuses, or to a mole; still they do not always prevent the irregularity; so, while a superfectation of five months may never have occurred, or even one at a month earlier in pregnancy, so far as the visible conditions go, a superfectation of five months seems as possible as some of the anomalies mentioned.

Dr. G. B. Walker said that the case before the Society so nearly resembled a case reported by himself, to the Tristate Medical Society, and published in the Chicago Medical Journal and Examiner, that he would ask the indulgence of the gentlemen present, while he read the report from said journal. After the reading, he stated that he believed the cases were susceptible of a similar explanation, and that is, that they were twin conceptions, and that one fœtus in each case died about the middle of gestation, or if later, the small size of the child was in consequence of disease of the placenta, or some other cause arresting development, causing a dead and immature fœtus to be expelled in company with a mature and living child. Diseased placenta may, in both cases, have interfered so much with the life and growth of the fœtus, as to cause atrophy first and death afterwards; the dead child remaining for weeks or months in the uterus, to be expelled at last in company with the normal child. The suggestion of superfectation would not, all things considered, be as easy an explanation of the case as that of a twin pregnancy, in which one of the twins had its development checked, and lost its life during gestation. In answer to the inquiry, as to the possibility of superfectation in the middle of pregnancy, Dr. Walker said, unless associated with certain malformations of the reproductive organs, it would seem to be almost an impossibility according the recognized laws, although some reported cases of the kind are not very easily explained. Admitting that it requires a period of from eight to fifteen days for the product of conception to travel from the ovary to the uterus through the tube, it would seem reasonable that a new conception might take place during this period, and even after the ovum had found lodgment in the cavity of the uterus, the male germ might still pass during the first month or two, along the unoccupied wall of this organ, so as to reach the ovary, and thus effect a second impregnation. About the third month, however, and from this time forward, the uterine cavity is so completely occupied, and the cervix plugged up with the amniotic sac, that it would seem to be impossible for the seminal fluid to pass beyond the vagina; hence, a conception, after the first conception had existed, say three months, might be considered impossible. It has been suggested, that some women menstruate during the whole period of pregnancy, and that the continuance of this function indicates the ripening and discharge of an ovule at each period, and it is supposed that if the menstrual fluid, floating an ovule, could pass down, the male sperm could also pass up to meet it. It is true that well authenicated cases of periodical discharges from the genitals, resembling the catamenia, have been observed; but there is little doubt, that such cases generally are threatened abortions, the monthly occurrence of the flow, depending upon the menstrual malimen, which is attended by greater engorgement of the pelvis, followed by hemorrhage from ruptures of some vessels connecting the ovum with the uterus. This is more apt to occur in plethoric women, whose vessels are distended, or with those who are feeble and delicate, from the frailty of the union between the feetal envelope and the uterine walls. If it be admitted that true menstruation occurs in some cases throughout gestation, it would be more reasonable to suppose the anomaly of its escape from the cervix or upper portion of the vagina, than from the uterus proper. It does not necessarily follow, however, that every monthly flow from the genitals, even in the absence of pregnancy, is attended by the escape of a female germ. In fact, it has been pretty well ascertained, though at variance with the common custom, that menstruation sometimes takes place without the discharge of an ovule, and also, that under strong sexual excitement, an ovule may escape during the

interval of the periods of the discharge.

As to the possibility of a dead feetus being carried in the uterine cavity for several months, without putrefaction taking place, it is well known that so long as the amniotic sac remains unbroken, and the atmospere is thereby excluded from access to the fœtus, its putrefaction will seldom occur. In this condition of the ovun, the soft parts of the fœtus are generally dissolved by maceration in the liquor amnii until nothing remains but the skeleton, with a small portion of adipocire, inclosed in its evelope of skin. Should the putrefaction follow rapidly on the loss of life by the fœtus, the woman would frequently be placed in a pitiable condition, from exposure to the local irritation caused by such a state, and of septicæmia from absorption of the poisonous fluid into the mother's system. In extra uterine conceptions, instead of carrying the child for months or years after its death, she would be unable even for a very short period to escape the baneful effects of absorption of the septic fluid from the cavity of her abdomen.

RHEUMATISM.

In pursuance of appointment made at the last meeting of the Society, Dr. E. B. Walker make an extempore report or statement on the subject of rheumatism. He described rheumatism as an anomalous disease, being an inflammation of certain tissues without some of the usual signs of inflammation, and without a tendency to suppuration, although in exceptional cases suppuration may result. It appeared to be the manifestation of hereditary predisposition in many cases, and frequently commences its attack as a painful arthritis, extending gradually from the joints to the nerves and muscles, in immediate anatomical relation thereto. It may be complicated with, or mistaken for neuralgia, gout, tertiary syphilis, or even phlegmonous inflammation. It may implicate the synovial membranes and dense ligaments about the joints, result-

ing in permanent damage to their functions. Its tendency to metastasis is a strange peculiarity, and at variance with the common laws regulating inflammations. Alkaline treatment has had perhaps more advocates in former times than any other, while the acid treatment has also had many friends. They were both aimed, however, at the same mark, namely, to remove some toxic matter from the blood, supposed to be left there by the failure of the kidneys to perform their duty faithfully. When, however, the result of these plans of treatment has been compared to that without any specific treatment whatever, the difference is so equivocal as to lead to doubts as to any great benefits being derived from them. Within the last four years, however, the treatment by salicylic acid has secured the confidence of the profession to a greater extent than that by any previous remedy. He (Dr. W.) had used the article pretty freely and taken it himself with increasing confidence in its curative value. It must be taken, however, in sufficient quantity to secure its beneficial effects, and this may be, when not contra indicated by disorder of the stomach or bowels, to the extent of from 3ss to 3j, especially in acute rheumatism. Salicine has been also used, but has given satisfaction equal to the salicylic acid. Should this article maintain the credit already awarded it, it will prove a valuable addition to the materia medica.

Dr. Day—Some one has said twelve days in bed cures rheumatism; there is some truth in this. Quite as much perhaps as that any one of the many remedies that have been used cures it. He had long since ceased to look for a specific for rheumatism; indeed he was convinced that many different pathological conditions are included under this appellation. Should we not suspect as much when acids, alkalies, and other remedies and means antagonistic in action, are equally followed by success and failure? The belief in a specific for this disease implies a materies morbi, sui generis, which idea he thinks ought now to be pigeon-holed. In cases of acute rheumatism—if there be no contra-indicatory circumstances—he gives a full dose of calomel to be purged off freely. The patient must be confined to bed and put under a diaphoretic and diuretic course. In chronic rheumatism he aims at once to change the habits and hygiene of the patient.

Dr. Compton said he had no doubt of the therapeutic value of salicylic acid in the treatment of inflammatory rheumatism; but the continued administration of this remedy was attended with so much danger to the life of the patient, just at the time we become ready to indorse and applaud its almost miraculous control over the disease, that he had been deterred from prescribing it indiscriminately or even very often. He recited the report of a number of cases which had proved suddenly fatal soon after the remedy had cured the disease. Three cases are reported by Dr. Charles H. Hall, of Macon, Ga., in the Medical and Surgical Reporter of January 19, 1878. "One, a woman twenty years of age; prescribed five grs. salicylic acid every two hours; nothing else. Continued this treatment seven days; each day brought additional improvement; no pain in the region of the heart; sounds natural. The cure on the seventh day seemed nearly complete and marvelous. Was called at daylight the eighth day (only two hundred yards to go); found her dead." The second case, "a boy seventeen years of age, took five gr. doses every two hours. On the fifth day patient suffered much pain and difficulty of breathing; cardiac symptoms all aggravated; I stopped the acid and gave alkalies; good recovery; believe if the acid had been continued he also would have died." The third case had been sick several weeks with acute articular rheumatism; had taken largely of salicine daily; "found him with great pain in the cardiac region, and difficulty of breathing. Anodynes relieved him; salicine suspended; no further trouble." Dr. Empis (Bull, General Therapeutics) reports a case of acute articular rheumatism; "patient took ten gr. doses of salicylic acid every two hours. Within twenty four hours decided relief of all the symptoms, but complained of deafness and tinnitus aurum; seven grs. salicylic acid every two hours; on the third day all treatment was suspended, and the success of the salicylic acid treatment was remarkable. After a restless night he fell back unconscious, inspiration at longer and shorter intervals; the heart ceased to beat and the patient was dead." Dr. Empis is very positive in his belief that either salicylic acid or metastasis was the cause of death. It was his opinion that the number of deaths reported from salicylic acid was greater than those from chloroform. Dr. Compton had usually had such good results from the use of alkaline dirretics and anodyne diaphoretics, together with an equal temperature of the body, he felt disposed to adhere to their administration, as constituting a treatment both safe and reliable.

Dr. Ross stated that he held the view that it is generally admitted that acute rheumatism is produced by an acid in the blood. He has examined the excretion of a great many cases, and in every one found an acid condition. He treats rheumatism by controlling the circulation with arterial sedative, verat, veride and large doses of sulph. quinia, or sulph. cinchonidia; has no choice between the two last-named remedies. He believes there is no remedy equal to the cinchona alkaloids, to neutralize and eliminate the peculiar acid from the system. He also uses alkalies at stated periods, until the excretions become alkaline; has used salicylic acid in a number of cases, but was disappointed in its action.

Dr. Edwin Walker said that in the use of salicylic acid, or any other remedy, he deemed it of the greatest importance, first, to make a direct diagnosis. He had met with a case of tertiary syphilis, that had been treated with salicylic acid. He believed the remedy to be useful only in acute rheumatism, while chronic rheumatism was little, if any affected by it. His results in all purely acute cases were good, except in one case in which the disease was not materially shortened. He preferred salicylicate of soda to the pure acid.

Dr. Achilles said, concerning the treatment of the various forms of rheumatism, it would seem to him that the value of salicylic acid has been over-estimated, and that its employment is too recent to draw positive conclusions as to its neutralizing power in a disease, the tendency of which with reasonable care as to the general health, often points to a favorable termination, even under the use of the most opposite medicinal agents, or without any medical treatment whatever. He considers this disease as having its cause in a disturbance, more or less extensive of certain secretions, causing an alteration of the animal fluids, especially the blood in which fibrin, for example, is largely in excess; the urine deposits, on standing, are usually a reddish precipitate of lactates and lithates, while the perspiration exhibits an acid odor and reaction. His views as to treatment nearly coincide with those expressed by Dr. Compton, namely, alkaline diuretics and

diaphoretics, combined with squills or colchicum, especially the former, after gentle depletion with calomel, and maintaining the bowels in a soluble condition; to this, under particular circumstances, he adds mild vesication, and whenever applicable the vapor bath, either local or general. With regard to the preference given by Dr. Edwin Walker to the salicylicate of soda, he is inclined to believe that the metallic radical, the alkali, mainly receives the credit, perhaps too readily given to its acid ally, in that combination.

Dr. E. B. Walker expresssed himself much gratified by the discussion that had arisen on the subject of rheumatism. Perhaps he ought to have added in his first remarks that he considered a judicious use of calomel and opium valuable in acute rheumatism, and a free course of diuretics and diaphoretics in chronic rheumatism. And to secure the desired effect on the skin and kidneys, no better remedy could be devised than the almost absolute comp. decoc. of sarsaparilla. Copious draughts of this decoction, he believed to be especially valuable in eliminating the poison from the system, of which rheumatism is the sign.—St. Louis Med. and Surg. Jour.

Claude Bernard.

TRANSLATED FROM "LE PROGRES MEDICAL" OF FEBRUARY 16, 1878, BY S. POLLAK, M. D., OF ST. LOUIS.

CLAUDE BERNARD has successfully investigated all the points of physiology and biology; first, the gastric juice which was mentioned in one of his first publications; soon followed the saliva, the intestinal juices, the action of the nerves upon digestion, respiration and circulation; later the function of the pancreas, which he demonstrated in 1849 in a memoir which brought him the great prize of physiology. He obtained the same high distinction for the four following years, from 1851 to 1853. 1849 is the date of his great discovery of the glycogenic function of the liver, and the still more surprising discovery of the artificial reproduction of diabetes by the puncture of the walls of the fourth ventricle. This experiment was frequently repeated. To the numerous contradictions, he presented innumerable and victorious experiments, elimi-

nating every error from his opponent's theories, and established a physiological truth, which is admitted to-day

by the larger majority of savans.

To discover the function of all of the glands of the intestines, to find the glycogenic function of the liver, to demonstrate its origin would be enough to make a physiologist as celebrated as Flourens or Magendie. Claude Bernard was indefatigable in the search of facts; it is thus that in repeating the works of Pourfor du Petit upon the great sympathetic, that he arrived at the discovery of the vaso-motors, a starting-point from which the researches and fruitful applications commenced to be appreciated in pathology; let us quote the page upon which he gives an account of this fundamental discovery; it is the best way to make one comprehend how he deducted from experimental fact the consequences unknown to his predecessors.

"* * * I made a section of the great sympathetic in the neck of a rabbit, in order to prove my hypothesis and to see what the relative effect would be upon the calorification of that side of the head where the nerve is distributed. I was led, as one may suppose, relying upon the prevailing theories of my predecessors to the hypothesis, that the temperature would be lowered by the section of the sympathetic nerve, * * * but just exactly the opposite result was reached. Then I did as I always do, abandoning my previous hypothesis, in order to observe and to study the fact for the purpose of determining as exactly as possible the true conditions by experiments * *."

Claude Bernard soon studied the principal nerves, examined the experiments of Bell, Flourens, Magendie, and brought into the delicate study of physiology of the nervous system, that clearness and sureness of experiments, which have so much contributed to replace by positive facts the vague ideas of ancient physiologists of every phenomena. By his researches upon the nervous centers, he was led to occupy himself at the same time with toxicology; hence new experiments and a new book treating of oxide of carbon, of curara, of strychnine, of nicotine, ether and alcohol. Curara, in spite of its scarcity, became one of the best known poisons, and fortunately for science, one of the most precious in the laboratory.

In 1857 Claude Bernard published his work on the physiological properties and pathological alterations of the

liquids in the human body, and this again formed the new basis for new experiments. The present tendency to analysis of organic liquid was inspired by the reading of this work, and by rules and methods taught therein; they were the same he expressed in his lectures in the College of France; they were further developed in his still later work.

Since that period he published several essays of subjects brought up in the course of his lectures, especially on anæsthesia and on calorification.

We don't venture to enter into the details of his works, which the world possesses and admires. We will content ourselves to remark that, in his lectures, he prefers that actual experiments should prevail; he bows to proven facts, which he is constantly seeking. He discarded all theories, disclaimed all authoritative ideas, unless established by experiments. He said his lectures shall be outside of a preconceived system; his only object was to keep science in the road of progress, and emulate young inquiring savans to make experiments, and never accept the teaching of any dogma without proof. "He modestly speaks of his works;" they are simple narrative of what is going on in the interior of the laboratory and in the amphitheater of a physiologist who works and discusses science, and this is the saying of a man who has made more discoveries than any of his predecessors, who lectured a greater number of years, who has written six distinct works on physiology, a treatise on operative medicine, and many memoirs which he presented to many scientific bodies.

Besides their scientific value, besides the precise facts which they furnish to pathology, the works of Claude Bernard have a great philosophical importance; they demonstrate how much science can elevate itself, to what great results it may legitimately pretend, when it frees itself of the narrow bounds of dogmatism or tradition. Science can only rest upon the results of frequently reported experiments. Applied to physiology, it is emphatically Claude Bernard's own; but in general, it is that of Bacon, of Descartes, of those minds, who admit nothing as true, that can not be demonstrated.

It is by his synthetical conception of the nature of tissues, and their biological properties, that Claude Bernard

elevated himself to the rank of philosopher, in his "Introduction to the Study of Experimental Medicine."

His works bear throughout a literary stamp; it is this which opened the door of the Academy of France to him in 1868; but it was not until 1869, in his great reception speech, that he enlarged upon the great importance of making experiments.

The loss which physiology suffers, which medicine deplores, and over which France weeps, is irreparable. Struck down in the midst of his work, without time to arrange or review the immense material which he desired to consecrate to his work on general physiology, Claude Bernard died as a savant in the breach, in full scientific activity, in full possession of his great intellect. It is this great loss to science that caused universal mourning and an outburst of sympathy from all nations.

The legislative assembly of France have, in accordance with the public desire, resolved to take charge of the obsequies of this great savant, who done so much to make

bis country illustrious.

To us physicians and men of science this loss is even more sensible. He, who died, was he not our master, the most authoritative representative? Did he not acquire immortality while living? Was he not the physiologist par excellence? The honest and capable experimentalist who opposed to speculative theories the results of most positive researches? Claude Bernard, the indisputable savant, shall he not occupy, in this century, the place which Haller and Lavosier have conquered in the preceding century?

Člaude Bernard is not entirely dead. His last works are wanting yet. In his early teaching lies the germ of an abundant harvest. Let us imitate his naive perspicuity, let us follow his rules of precise observation; this would be the best manner of honoring the memory of the man who bore within himself the genius of physiology, and who, according to the sayings of a distinguished statesman, was a luminary which can never become extinct.—

St. Louis Med. and Surg. Jour.

The Future of Scientific Discovery.

Five years ago, a gentleman distinguished for his attainments in science and art remarked to us that, in his view, the progress of discovery would be practically arrested during the remainder of the present century, and the boundaries of science remain as they were, or with very little advance. This view was held under the impression that the advancement of knowledge had been so rapid in the last third of a century that little was left to be learned which came within the scope of human capability; and it was also assumed that invention and discovery were governed by certain laws which rendered progress intermittent, or that there were cycles of time when great things were accomplished, and then came a season of rest.

These views have proved fallacious and untrue, for never has greater mental activity prevailed, and never have greater results been achieved in scientific discovery than during the past five years. It has been within that period that some of the most wonderful inventions have had birth that human thought has ever devised. Five years ago who supposed that we could ever be able to converse in audible voice over the ordinary telegraph wires; or that we could ever place upon tin-foil, or on thin iron plates such gravings and dottings as would give back the words and tones of the human voice weeks, months or years after they were spoken? It is not five years since Prof. Crookes gave us the wonderful radiometer, an instrument which opened up some new views of the occult force which is manifested in light and heat; and it was but yesterday that the announcement was made of the grand discovery of means by which the permanent gases have been changed to solid bodies. Electrical illumination has been demonstrated to be practicable and economical, and in one city, at least, the experiment has proved successful of warming dwellings by steam heat distributed in pipes under ground, after the manner of gas conveyance.

It is evident, from this imperfect review of what has been accomplished in the world of science in the past five years, that the field of research is still an open and promising one. It is impossible to arrest or place boundaries to the scope of human thought and human art. One discovery paves the way to another, and before the record of the century is closed, results will be reached of which the

world now little dreams.

On Paracentesis of the Pericardium with a Successful Case.

BY WILLIAM PEPPER, A. M., M. D., Prof. Clinical Medicine, University of Pennsylvania.

Gentlemen:—You will remember that in connection with two cases of pericarditis of moderate severity, which formed the subject of a lecture several months ago, I referred to a desperate case of pericarditis, with effusion, in which it had been necessary to perform paracentesis. My chief object to-day, in returning to the same subject, is to report at length the latter case, and to make a few prac-

tical remarks in connection with that operation.

Sarah C., Æt. 17, a well-developed girl, enjoying general good health, had noticed since May, 1877, some shortness of breath on exertion, especially after mounting the long flight of stairs leading to the fringe factory where she worked. She had also been obliged to pass urine more frequently than usual. She had never mentioned either of these symptoms to her parents, fearing that they would make her stop working. In early childhood she had passed through a mild attack of measles; but had never had any other exanthem or rheumatism. On Sunday, September 2, she suffered with præcordial pain. No cause could be assigned for the attack, unless it were that she had been chilled by a draft which blew upon her as she worked. On Monday the pain continued with some sense of oppression. She did not leave the house; but it was not until Wednesday, September 5, that she became quite suddenly so ill as to confine her to bed, when she was seen by Dr. George Rex, with whom I saw the case in consultation, and to whose courtesy I am indebted for many of the facts in connection with it. He found her with a very moderate degree of fever, but with some anxiety and distress, and with rapid pulse, frequent breathing, and severe præcordial pain. By Friday, September 7, she was much worse. There was still severe præcordial pain, with great restlessness and distress. The respiration was very frequent and much labored. pulse was extremely rapid, feeble, and irregular. apex beat of the heart was felt with difficulty, and the sounds were feeble and distant, though apparently without vulvular murmur. The area of cardiac dullness was

increased. The tongue was moist and somewhat furred. The stomach was retentive, though there was no appetite The urine was rather scanty. From time to time there were paroxysms of terrible dyspnæa and cardiac distress, in some of which she seemed almost asphyxiated. Her condition became, in all respects, somewhat worse during Saturday and Sunday, and, in addition, there were on the latter day two convulsive attacks, with loss of consciousness for a few minutes, and slight muscular spasms

of the face, arms and legs.

I saw her in consultation with Dr. Rex, first on Sunday night, September 9. The patient was lying in bed, with but a single pillow under the head. The face was very pale, and the lips livid; the extremities tended to be cold. There was extreme restlessness and jactitation, with a sense of suffocation if any one even approached her. It was necessary to fan her constantly. The respirations were over 60; the pulse at least 145; very small, feeble and intermittent. The pupils were dilated; the expression very anxious; the intelligence clear. There were constant complaints of severe præcordial pain. The paroxysms of alarming dyspnea were now very frequent. On physical examination no lesion of the lung was found. The præcordia was somewhat prominent. The impulse of the heart could neither be seen nor felt, and its sounds were hardly audible, being distant and feeble, and apparently without murmur. The point of their greatest intensity was at mid-sternum, opposite the third interspace. At the normal position of the apex-beat no sounds were audible. No friction sounds were heard. The area of cardiac dullness was much enlarged, and of rudely triangular shape. Its base was on the level of the seventh rib, and extended from one inch to the right of the sternum to two inches to the left of the line of the left nipple; the upper limit of the dullness was the second interspace. Its greatest transverse diameter corresponded to the level of the fifth interspace. Changes in the position of the patient's body produced no effect on the horizontal lines of dullness.

The urine contained a slight trace of albumen, and microscopic examination showed a few fragmentary hyaline or granulo-hyaline tube-casts, and a few cells of renal epithelium. There was no edema of any part, save a slight puffiness about the ankles. The question of tap-

ping the pericardium was discussed, but the parents would not consent. She had been using digitalis and a diuretic mixture. These were continued, ten drops of digitalis being given every three hours. A blister four inches square was applied over the præcordia. She objected violently to stimulants, even in very small doses, asserting that they immediately caused agitation of the heart, with great distress in the head. On the other hand, Hoffman's anodyne gave some relief to the paroxysms. During Monday and Tuesday (September 10 and 11) she grew worse, if possible, and had several slight convulsive attacks. I saw her again with Dr. Rex, late on Tuesday night. She was then dull and listless, with livid lips and cold extremities. The respirations were mere shallow gasps, 75 to 80 in the minute. The pulse was over 100, extremely thready and intermittent. At times, also, the respirations were distinctly of tidal character, ascending and descending with marked intermissions. Each paroxysm of dyspnæa seemed as if it would prove fatal, and it seemed clear that death would occur before morning. The consent of the parents being obtained, I immediately performed paracentesis of the pericardium, with the assistance of Dr. Rex and of C. B. Nancrede. The smallest needle-pointed canula of Dieulafoy's aspirator was employed, with a vacuum jar. The puncture was made in the fifth intercostal space, about one inch inside of the line of the left nipple; i. e., nearly in the normal position of the apex-beat. The needle was introduced in a direction upward and inward. As soon as its extremities were fully covered by the soft tissues, the communication with the vacuum jar was opened, and the needle was cautiously pushed onward. When the liquid began to flow into the jar, and the point of the needle was felt to be free in the pericardial sac, the needle was directed somewhat downward and outward. Rather more than eight fluid ounces of reddish serum were removed; after which the flow ceased. The serum contained a large proportion of albumen, many red-blood globules, and a large proportion of pseudo-fibrin. No difficulty whatever was encountered in the operation. Once or twice the point came in contact with a firm and apparently roughened surface, which was probably the apex of the heart, coated with lymph. The effect of the operation was magical. The pulse fell to 114, became regular, and much more full.

The respirations soon fell to 40, and became much more deep and regular. The apex-beat of the heart could be felt, though still feeble and too high up. The cardiac sounds became immediately much more distinct. The lips grew more red, and the expression improved vastly. She expressed herself as feeling much better, and able to lie quietly. She was ordered iodide of potassium gr. v, and tincture of digitalis gtt. x, each every four hours. The diet of skimmed milk was continued. There was no evidence of any return of pericardial effusion, and for two days she continued very comfortable, although the urine was still faintly albuminous. On Friday, September 15, two severe convulsions occurred; the mind grew dull; the respiration again became rapid, and tidal in character, and the pulse intermittent. On September 16 she continued in a partially uræmic state, with several convulsions. Still no sign of increased pericardial effusion occurred; but, on the other hand, the area of dullness progressively diminished, and the impulse and the sounds became more distinct. On the evening of this day an enema of infusion of jaborandi (3j of powdered leaves in 3iv water) was given. The effects were rapid and marked-violent headache, repeated vomiting, copious salivation, and drenching sweat, lasting six or seven hours. She passed a more quiet night, and was better the following day. The pulse was now regular, and more full-108 in the minute—and the breathing easier. The cardiac impulse and sounds more distinct, and slight friction sound audible. The use of digitalis, iodide of potassium, and diet of skimmed milk continued.

She had two convulsive attacks on September 17, and on September 18 three severe attacks; in all of which she was unconscious, with frothing at the mouth, and general convulsive movements. The cardiac symptoms continued to improve. There was a trace of albumen in the urine, but no tube-casts could be discovered. On September 19 a second enema of infusion of jaborandi was given, with the same prompt and severe effect. No further convulsions occurred. The cardiac symptoms continued to improve slowly, but steadily. There was no severe dyspnœa after September 28. She was able to leave bed on October 7, twenty-six days after the operation; and from that onward her progress toward recovery was quite satisfactory.

Remarks.—It will be seen that in this case the preservation of life was solely due to the operation of paracentesis. It seemed abundantly evident that, on the evening of September 11, without immediate operative relief, life could not be supported through the night. The renal complication which existed was probably due to the pericarditis; and, after the heart's action was liberated, it became possible to deal successfully with the uræmic symptoms. In this connection it is interesting to note the great value of jaborandi. We have in this remarkable drug a new agent of vast power for the relief of such symptoms. After the operation there was not the least sign of any return of pericardial effusion; and, although it is probable that adhesions have formed, there are no evidences at present that the heart's action is embarrassed by them. So far as the original disease is concerned it may be said that a complete cure was effected. The subsequent attacks of subacute peritonitis, and of plastic pleurisy, indicate a constitutional character for all of the successive affections of the serous membranes, and I fear that it may prove that they have been tuberculous.

You will, of course, perceive that at the basis of these practical rules lies the question of an accurate diagnosis. Fortunately, in the vast majority of cases, this can be made without serious difficulty. It is indeed true that errors in diagnosis have been made even by skillful and experienced observers; but in such cases it will be found that very unusual complications or anomalous conditions existed. Certainly, if the case is an acute one, and has been under observation while the effusion formed, an accurate diagnosis can readily be made. Nearly always there will have been a friction sound of cardiac rhythm, and this may persist, especially about the base, even after considerable increase in præcordial dullness from effusion has been developed. Then carefully repeated percussion will show at first extension of dullness about the base of the heart; but soon this will be followed by a change in the shape of the area of dullness, which assumes a rudely triangular form, with its base downward, together with a decided extension of the area. If percussion be practiced both when the patient is in the sitting and in the recumbent position, scarcely any difference will be observed in the horizontal level of the dullness; but if the patient be turned first to one side and then to the other, it will often be found that the area of dullness, without changing its shape, has some mobility from side to side. The position of the apex-beat of the heart will also be observed to change as the effusion occurs; it becomes raised more and more, and then becomes lost, though sometimes an obscure sense of shock can be felt over the præcordia after a distinct cardiac impulse can no longer be detected. The sounds of the heart become markedly feeble, distant, and obscure; and the center of their greatest intensity may be observed to vary from its normal position. In addition, there may be found, in cases of very large effusion, prominence of the præcordia, slight bulging of the intercostal spaces over the heart, and even fluctuation on palpation. If the case has been under observation from the beginning, and careful attention has been paid to the above signs, a large pericardial effusion can scarcely escape detection—unless, indeed, there should coexist pleurisy with effusion on both sides, or on the left side alone. In this event it would probably be impossible to decide as to the presence or absence of pericardial effusion until the liquid has been withdrawn from the left pleural sac by aspiration. If the combined effusions were not sufficiently extensive to cause symptoms demanding operative interference, the ordinary treatment for pleurisy would suffice; while if such symptoms did appear, as in all probability they would, it would be proper to tap the pleural sac first; after which the pericardial effusion could be easily recognized, and treated as seemed appropriate. The case where the greatest difficulty occurs in the diagnosis of pericardial effusions are those which come under observation only after the disease has lasted some time. Here we could scarcely expect to find friction-sounds, and we would be without the valuable aid furnished by observing the progressive changes in the extent and shape of the area of dullness and in the position of the apex-beat. We must then rely upon the prominence of the præcordia; the enlarged triangle of duliness, with its base below; the absence or altered position of the apex-beat; the distant and feeble character of the heart-sounds; the displacement of the anterior border of the lungs, and the extreme disturbance of circulation and respiration. It is true that an enlarged and dilated heart has been mistaken, and has even been tapped, in mistake, for a distended pericardial sac. But a searching investigation into the history of the case—the fact that the apex-beat, however feeble, is on the lowest level of præcordial dullness—the shape of the area of dullness, which here also is triangular, but with its base upward and to the right; and the character of the heart-sounds, which, though feeble, are much less distant and obscure than in large pericardial effusions—all of these will combine to enable a correct diagnosis to be made. Again: a solid, mediastinal tumor has been mistaken for a distended pericardium; but I am confident that close attention to the diagnostic points I have given would prevent the commission of this error.—Med. News and Library.

Bloodless Tracheotomy.

Every one who has been called upon to perform tracheotomy upon a young child suffering from threatening asphyxia, where the venous plexuses of the neck are engorged, and each touch of the knife may flood the wound with blood, will appreciate any method of operating by which this danger can be avoided, and tracheotomy added to the list of the bloodless operations. The attempt to accomplish this has been several times made. In 1872 M. Verneuil employed the galvanic cautery instead of the bistoury in several cases with success; but this method is evidently ill-adapted for general use, as the necessary apparatus is cumbrous, and only to be found at hospitals. More recently Mons. G. Poinsot, of Bordeaux, has used Paquelin's thermo cautery with excellent results, and his example has been followed by other French surgeons. The skin and soft parts, quite down to the trachea, should be divided by successive light touches of the point of the cautery, heated to a dull red color, and when the trachea has been exposed it should be opened with the knife, and the tube inserted in the usual way. The cautery must be used lightly, or its action will be too extensive, and a thick eschar be formed; and if it be used too hot, as is well known, it loses its hæmostatic power. The cautery is not suited for opening the trachea, because the radiation from its hot point introduced into the air-passage would be harmful, and there is some risk of burning its posterior wall; while in adults it is difficult to sever the

firm rings with it, and particularly if they are at all ossified, and the loss of substance that an eschar necessarily involves might cause trouble from narrowing of the air-tube. On the other hand, as the use of the knife for this purpose does not cause hemorrhage, it is free from objection. In fat subjects the wound may become filled with molten fat; this is readily removed with a sponge. In addition to the bloodlessness of this mode of operating, Mons, Poinsot claims for it two other advantagesthe spontaneous retraction of the edges of the wound, rendering unnecessary the aid of assistants for this purpose, and giving a funnel-shaped opening down to the trachea; and the protection of the wounded surfaces from the contagion of diphtheria. Slight secondary hemorrhage has followed this operation in several cases, but in no case has it been severe, yielding readily to simple treatment. Although the wound gapes widely at first, the resulting cicatrix contracts to a small size, and has not given rise to any unpleasant symptoms in any recorded case. This appears to be one of the most useful applications of this recent addition to the surgeon's armamentarium. It promises to change tracheotomy from an operation which is always anxious and often very trying into a safe and simple proceeding; and we may hope that it will, in this way, add to the value of the operation by leading to its more frequent and earlier adoption in obstructive diseases of the larvnx.—The Lancet.

An Old Medical Thesis.

Many a medical student, who intends to be a candidate for graduation next spring, is just now vexing his mind with thoughts as to his thesis, and with work upon its preparation. The Christmas holidays will bring him little recreation, for all leisure time must be given to this labor, which he thinks so important. Lo! the hundreds of reams of paper that have been the receptacle of the crude thoughts of medical students, or of the carefully-culled extracts from standard authors in medicine, and the thousands of bolts of ribbon, that have been consecrated upon the venerable altar of theses! Alas, if the anxious workers should know what fate awaited these best productions of their brain or pen, in all probability never entirely

read—possibly not even glanced at—by any one but themselves, how quickly many an ambitious hope would perish. In our old medical colleges there are hundreds or thousands of these forgotten relics, time sprinkling dust upon their pages, eating away their once fair characters, and remorseless moths devouring their faded ribbons, or irreverent mice chipping silks and paper for beds of parturition and nurseries—masses measured by bushels, by boxes, by piles only fit to "be cast as rubbish to the void." And what has been will be. As are now the theses of past years, so will be those of 1877.

A few of our medical colleges have wisely abolished the rule requiring these exercises of the medical student's knowledge, or of his transcription, but most of them run in the old ruts, and uphold a "custom more honored in the breach than in the observance." And, therefore, the mass of our American medical students must pass into the state of doctorhood bearing the cross of a thesis as a mark of

fitness.

But suppose their productions were required in Latin, how the anxiety we have alluded to would be turned into dire consternation. It is not probable that fifty per cent. of our medical students have ever studied Latin at all, and of that number not ten per cent. could claim to have been well instructed in Latin composition. It might be a comfort for those incompetent to endure this severe test, to think that possibly some of their teaches were not themselves Latinists; indeed, if the truth must be told, the doctor is to be envied who has not more than once found a professor in a medical college who was not even a respectable English scholar, who could neither speak nor write his mother tongue correctly, and who would be promptly rejected as a teacher in a common school. Medical schools now and then prove to be uncommon schools in one respect, at least.

We have been led into this train of thought by having before us a Latin thesis written in 1771, by Jonathan Elmer, M. B. Dr. Elmer was one of the few who, in Philadelphia, June 15, 1771, received the degree of M. D., Professors Morgan, Shippen, Kuhn and Rush being members of the faculty. With only four theses a thorough perusal was highly probable, and with such a corps of teachers absolutely inevitable. The thesis being in Latin, dissertatio medica inauguralis, was no concealment to men of

the classical learning these men had; some of them, indeed, having themselves testified that learning in Latin theses when graduated at the University of Edinburgh.

Dr. Elmer dedicated his dissertation to Benjamin Franklin, viro perillustri, and to his son, William Franklin, the Governor of New Jersey. He was then twenty-six years of age, but had already made some mark as a writer by a criticism, in 1767, of Dr. William Shippen's theory of the choroid being the immediate seat of vision; by an essay the same year on the motion of the heart; and by another on the different constitutions of the air and the diseases connected therewith, in 1769, for the American Philosophical Society, of which society he became a member in 1772, Dr. Franklin being the President. Knowing these facts in his history, we look with increased interest at this printed pamphlet of twenty odd pages of well-written Latin, in its production antedating five years the Declaration of Independence.

The subject of the dissertation, putting it in plain English, is the Causes and Remedies of Thirst in Fevers.

The author could draw not only from Hippocrates, Celsus, Boorhaave, Hoffman, Whytt, Sanctorius, Von Swieten, and Mead, but did not disdain Quintillian, Cicero, and Lucan.

We do not care to have our readers follow him through his ingenious reasoning as to the causes of thirst in fevers; the acrimony of the blood, and the increased irritability of the nervous system, playing an important part. When he comes to discuss treatment, he observes: "Tolle causam, cessabit effectus, in philosophia aphorismus est celeberrimus et argumento nostro aptissimus. Of course, therefore, remove the fever, and the thirst will cease. But where this can not be done, or while it is being done, relieve the thirst.

First in his list of remedies he places pure water, and quoting from Baron Von Swieten's Commentaries a case of the successful use of this agent cold gives a half-way indorsement of cold drinks in fevers—a wonderful admission and advance for 1771. Then follow as remedies, acidulated drinks, acescent liquors, ripe fruits, neutral salts, anodynes, anti-spasmodics, and the list is concluded with epithemata and enemata.

Dr. Elmer returned to his Jersey home, and entered upon the hard life of a country practitioner, making his

rounds on horseback. He became eminent in his profession. Dr. Rush remarked of him, that in "medical erudition he was exceeded by no one in the United States." He bore an honorable part in the Revolutionary struggle, and after a while, in consequence of feeble health, abandoned practice, and worthily filled important positions, both legislative and judicial—the former not only being State but National. Some of his descendants are now worthy successors to his medical honors and labors, living almost in the daily view of his grave, and working in the

same field where he lived his useful life.

The earliest recollections of our own childhood are identified with the scenes where Dr. Elmer's professional labors had been performed; and in the dim distance of forty years the sluggish creek, the slow vessels following its wearisome windings, loitering, lingering in its seaward journey as if loth to leave its muddy banks, with their ragged edges black and shining with the tide's ooze; the level marsh, the sandy soil over or through which wheels noiselessly move; the peaceful calm and stillness; a few miles off the small, sleepy village of Greenwich, that in its infancy long ago was expected to be a formidable rival to Philadelphia, and that ought to be as memorable for the burning of obnoxious tea in 1774 as Boston for casting it into the water, and that is memorable as the birthplace of one of the most illustrious of physicians, Dr. George B. Wood-all seem more like a vision from "Dreamthorpe" than a page from memory. But we are wandering where our readers can not accompany us.

Have we any regrets that these Latin theses have ceased? Nay, let the English, too, become a thing of the past. But let us by no means discourage classical culture on the part of medical students. Greek and Latin they ought to have, not in full college measure, but only half, giving the rest of the time that ordinarily is devoted to these studies to German and French, and instead of the higher mathematics let them learn to use the pencil and the brush. When will wiser views of education take possession of teachers, and needed reforms be made? All grades of learning should be but stepping-stones in the individual's pathway—equipments for his special work in life. Those who are looking forward to the different learned professions should have their educational paths diverge much sooner than they do. Life is short, and preparation for

its special and highest duties should be commenced much earlier than it is. When the reform indicated is accomplished, we will have better preachers, better lawyers, and better doctors, even though the last may not be able to write inaugural dissertations in Latin.—Amer. Practitioner.

MICROSCOPY.

About the Object-Glass One-Sixth of an Inch (Duplex) of R. B. Tolles.

AN EDITORIAL IN THE "JOURNAL DE MICROGRAPHIE" BY DR. J. PELLETON.
TRANSLATED FOR THE "MEDICAL NEWS."

WE have just received from one of our correspondents

the following note, which we hasten to answer:

"In your excellent account of the object-glass one-sixth of an inch (duplex, double) of Mr. Tolles, you say 'that object-glass has four lenses.' All persons who understand the construction of achromatic lenses will understand what it means, but others may believe that it allows only of four lenses. The truth is, that it allows of several lenses disposed in four systems. The number of lenses used constitutes the formula of the maker. A formula which is not now in use has been published by Dr. Woodward in the Monthly Microscopical Journal; the object-glass mentioned had seven lenses in three systems. I have had one four-tenths of an inch, constructed by Tolles in 1866, which had ten lenses in three systems. An object-glass 30°, which the same maker is now manufacturing, contains eight lenses. But such an object-glass, containing eight lenses, constructed by a master, can not be furnished at the same prices of those of Hartnack, Verick or Nachet."

The Journal de Micrographie has been often reproached with being too learned. We have therefore supposed that all our readers understood that an achromatic lens is a compound lens although it constitutes but one lens or one system; and that one of those object-glasses, which are here denominated "with four lenses," includes three or four achromatic lenses or a certain number of complex systems, and, consequently, a variable number of elements. For instance, all our readers, in France, at least, denomi-

nate an object-glass with three lenses, one that is composed (1) of a posterior lens, simple or complex, or system of lenses (back combination); (2) of a middle lens, simple or complex, or system of lenses (middle combination); (3) of a simple or complex lens, called frontal (front lens). When this front lens is itself composed of two independent and separable lenses, we say, in France, that the object-glass is with four lenses; that is what is called in America (duplex front). Such are, in France, the object-glasses of MM. Hartnack and Prozmowsky, $\frac{1}{8}$, $\frac{1}{12}$, $\frac{1}{25}$, $\frac{1}{50}$ of an inch (Nos. 8, 10, 13, 18), constructed since 1876; such are, in America, the object-glasses of Tolles, and especially the $\frac{1}{6}$ of an inch, mentioned in the number of January last, page 42. Such is also the splendid $\frac{1}{16}$ of an inch, by the same maker, which will be described in our next number.

Arche Biosis, or Spontaneous Generation.

BY S. P. CUTLER, M. D., MEMPHIS, TENN.

In the spring of 1877 I put thirty-five grains of potassium iodide into a bottle containing a pint of the purest cistern water for my own use, and took daily of it for about a week, when it began to smell badly and became cloudy and dirty in appearance. In consequence I threw it away and made up a new lot, thinking something might have contaminated the first preparation. I commenced using this in the same way, and, as before, the same bad smell and cloudiness began to make their appearance, in about the same length of time. I discontinued its use and set it aside.

Some weeks afterward, on examining the bottle, there was found a large quantity of dark floculi floating in the bottle; the bad smell was gone, and the solution was now clear. Fermentation had done its work. The above facts led to microscopic researches, with the following results:

Under the instrument there was visible a beautiful plant growth, which I regarded as true mycelium in all of its perfection. On examining it again, about a month afterward, I found the fibrous growth had increased in size, with branches like plants, and seed pods floating through the liquid, resembling very much yeast plant in beer. The bottle being perfectly clear and the water

pure, I am at a loss how to account for the fungus growth. Subsequent experiments made in bottles with glass stop-

pers gave similar results.

If there is any such thing as spontaneous generation, fermentation to my mind must be the parent; but if these forms come from eggs or germs, there certainly can be no need of any fermentation to cause germination any more than any other form of germination—as seeds planted in the ground or the hatching of eggs.

Mr. Pasteur and Mr. Bastian, in their exhaustive experiments, have gone over the whole field of research with similar results, but opposite conclusions in this direction. So far as I have seen, neither of them have

made experiments with iodide of potassium.

Mr. Bastian's experiments with ammoniac turbate, sodic phosphate and ammoniac carbonate have not produced as perfect organic forms as the above experiments of mine. His solutions contained some of the chief elements of plant-life—mine did not, except the potassium,

which is not a basic element in plants.

In the above experiments we have a plant that should contain carbon as a basis of structure; still there is no proof of any carbon being present; on the contrary, there is proof of the absence of carbon, as I put some of the fungi on a slip of glass and held it over a spirit lamp until nearly red-hot, without burning it up or producing any smell of burning plant or flame. After burning for some time there was very little apparent change under the microscope; only a slight thinning or wasted appearance; no change in structure. The question with me is whether or not the forms in the iodide solution were truly organic; if so, how produced? If from germs, what kind of germs were they? I leave this question for others to solve. True, mycelium, phænix-like, rises out of dead or decaying wood; not so with the iodide experiments.

Last summer Messrs. Bastian, Tyndall, Pasteur, and the Commission appointed by the French Academy, were to have met in Paris to settle the whole question of spontaneous generation by rigid experimentation with urine and potash. Owing to misunderstandings and mutual jealousies these scientific gladiators failed to come to-

gether. So the world is still left in doubt.

NUCLEUS IN THE RED CORPUSCLES.—An article in a late number of the Quarterly Journal of Medical Science, being a translation of a paper by Prof. Arthur Boettcher, of Dorpot, on the "Minute Structural Relations of the Red Blood Corpuscles," communicates the fact that a nucleus can be demonstrated in the red-blood corpuscles of mammals by treating them with a solution of corrosive sublimate in alcohol. This solution deprives them of their coloring matter, whilst the albuminous material of which they are chiefly composed remains, with preservation of their original form. Treated in this manner, the bloodcorpuscles of ordinary blood are found to be capable of arrangement in several groups. First, those which appear homogenous and shining; secondly, those which present a homogeneous shining cortical layer and a granular mass in the interior, which last is more darkly-stained by carmine and eosine. These corpuscles are by far the most Thirdly, blood-corpuscles are met with in which three parts can be distinguished: (a) the bright homogeneous cortical layer; (b) the granular protoplasm, which stains more deeply with carmine; and (c) a clear nucleus inclosed in the latter, and containing a bright nucleolus. Prof. Bættcher had the opportunity of examining the body of a man-the porter of the Pathological Institute-who drank a large draught of the solution of corrosive sublimate in alcohol used in these researches, and carefully investigated the condition of the blood. He found that the corpuscles presented one or other of the characters recounted above, and is disposed to consider that the changes in the blood-corpuscles play an important part in poisoning by corrosive sublimate. Prof. Boettcher describes in addition the effects of his solution on the red blood-corpuscles of the camel and frog, and points out that his results are incompatible with the doctrine of a stroma in the corpuscles originated by Rollet. He regards the stroma as an artificial product.

Tolles' Second Quality One-Tenth.—We have recently received from the agent of Tolles, Mr. Stodder, one of Tolles' second quality one-tenth objective, dry, 120° angle of aperture. Although rated as a second quality lens, yet it compares very favorably with the best glasses of the same power of many makers. It resolves with ease all but the most difficult tests. The striæ of p. angulatum are resolved

with ease by central light. The working microscopist would seldom feel a necessity for any finer lens, for it is capable of exhibiting distinctly anything the botanist, entomologist, pathologist, etc., would ever meet with. It has an adjustment of great delicacy by the front lens. The price is only thirty dollars. Mr. Stodder, agent, informs us that he has one in stock that mates the one sent us in every particular. The same price is asked for the objective as an immersion. The latter, of course, will have finer definition.

CHANGE.—We have learned that Mr. E. Gundlach and the Bausch & Lomb Optical Co. have dissolved their connection. The latter inform us that they will continue to manufacture microscopes and objectives—the same excellence of quality of work being maintained, and the same

low prices continued.

In our advertising form will be found the advertisement of Mr. Gundlach, who, it will be perceived, proposes to carry on by himself the manufacture of objectives and stands. In a circular which we have received a number of patterns of microscopes are announced—a student's, physician's, and general professional microscope. His complete microscopes will, as we learn from the circular, instead of the non-adjusting $\frac{1}{5}$ inch and the $\frac{3}{4}$ of 27° , be provided with $\frac{1}{6}$ inch adjustable, of equal working distance, and higher performance, and a $\frac{3}{4}$ of 32° .

The higher powers will be constructed on the four-system plan, and will attain the excessive angle of 150° angle

in water.

To the Messrs. Bausch & Lomb Optical Co. and Mr. Gundlach united is due the credit of reducing the prices of microscopes, furnished with first-class optical parts, within the power of those of limited means. We hope that their becoming disconnected will not be to the disadvantage of microscopists, but that a legitimate competition between them will bring about still lower prices, a higher grade of work, and a large gain to them by making microscopes more numerous, and increasing the number of their patrons.

FAIRMOUNT MICROSCOPICAL SOCIETY.—Regular monthly meeting of the Fairmount Microscopical Society held February 21, 1878. Letters were received and read from

Mr. Julien Deby, of Brussels, Belgium, and Theodore Taylor, of Washington, D. C., who were elected corresponding members at the last meeting. The former sent duplicate numbers of his works—principally on diatoms—for distribution among the members. The Cincinnati Medical News, and Bulletin of the Belgium Microscopical Society, were also on the table. Papers on Fungi were received from Prof. Wm. G. Farlow. Mr. Milne exhibited a one-tenth of Wales' dry and immersion, and one-sixteenth of Gundlach's immersion. These were tested on diatoms and podura scales. Several new formula for preservation of larvæ, hydræ, nemotodæ, infusoria and algæ, by Meyer, were read. They consisted of mixtures of glycerine, water, pyroligneous acid, and salicylic acid. After examination of objects the Society adjourned.

WM. C. STEPHENSON, JUN., Secretary.

MICROSCOPICAL SOIREE.—The State Microscopical Society of Illinois held its annual soiree, by invitation, at the residence of Mr. E. W. Blatchford, at Chicago, on the 8th of March. This conversazione was one of the most notable scientific events that have ever occurred in the city. Though given in the name of the State Society, the invitations were not limited to its members, the spacious residence being so thronged during the evening that fully 700 people are believed to have participated in the reception. Among the guests were many of the leading citizens of the town. Over fifty microscopes were in use. on tables distributed through a number of rooms—the whole house being given up to the entertainment. The arrangements were under the direction of Messrs. Henry W. Fuller, President; H. F. Atwood, Secretary; and B. W. Thomas, Treasurer of the Society; assisted by Prof. S. H. Peabody, of the Academy of Sciences. A wellselected variety of popular objects was shown by members of the Society, including some that are seldom used at public exhibitions on account of their difficulty-Mr. B. W. Thomas showing under two binoculars the circulation in both the tongue and the lungs of the frog. addition to the instruments owned in the city, a variety of Beck and of Gundlach microscopes were loaned to the Society by Messrs, Walmsley and Bausch & Lomb. Variety was contributed to the entertainment by experiments with electricity and the telephone. Both socially and scientifically the reception was most creditable and encouraging to the Society.

GLEANINGS.

A CASE OF MOVABLE KIDNEY.-I first saw Mrs. T. on March 12, 1878, in consultation. She is twenty-two years of age, and has two children, aged three years and sixteen months, respectively. She states that, with the exception of great pain in her back and loss of motion in her lower extremities, from which she suffered six years ago, and which lasted a year, and from which she quite recovered, she has always been healthy. About one year ago she noticed a tumor, about the size of a hen's egg, below her ribs on the right side. This came lower down, and got larger she says, until by degrees it got almost to her groin. She had some nausea if she manipulated the tumor much. Present condition: She is pale and emaciated, feels very weak, has no appetite or rather fears to eat on account of the nausea that follows. Menses regular, but profuse. Urine normal. Bowels irregular. On examining the abdomen I found on the right side a tumor about three and one-half inches long, and two and one-half broad, which could be freely moved over a space of four inches or more. It could be pushed back under the ribs up into the loins, and also downward and across to the umbilicus. It descended when she took a long breath, was smooth and hard to the feel, and was not painful on pressure, but pressure caused a feeling of sickness and a sensation of weight. There was a depression in the right lumbar region, which was slightly tympanitic on percus-There was dullness over the tumor. When she lay down the tumor fell back and could be pushed into place, and the resonance before elicited in the lumbar region was found to be absent, and the depression had disappeared. Mrs. T.'s medical attendants, Drs. Thompson and Hoare, concur in my diagnosis, that it is a case of movable kidney.—Dr. Bettridge.

A LITTLE KNOWN SIGN OF CANCER OF STOMACH.—Dr. Henri Huchard, in a communication to the Clinical Society of Paris upon certain diseases of the stomach, narrates the

following circumstances: "This man was cancerous: the loss of strength, the emaciation, the slightly cachetic tint, and the paleness of the integument justify this supposition. But what was the seat of the cancer? Doubtless in the stomach, since this patient had had some digestive symptoms, and he had also experienced pain, slight, it is true, but still persistent, in the pit of the stomach. What still further confirms this diagnosis is the presence of a sign to which Professor Peter, who assisted me in the examination, first directed my attention, and the correctness of which I have several times since been able to verify: when superficial percussion, percussion en dedolant, is made over the stomachal region somewhat distended by gas, there is found at certain points, especially in the region of the greater curvature, a certain obscurity of the note alternating with zones of sonority. But this sign is absolutely wanting on deep percussion, such as is ordinarily employed. Professor Peter, with his great medical skill, then diagnosed a cancer of the stomach, situated at the posterior surface of the greater curvature, with some cancerous nodules probably disseminated through the epiploon below the splenic region, and also in the hypogastric region. At this last point also superficial percussion gave the same results.

We insist upon this mode of percussion, which in obscure cases may prove of great utility in determining a doubtful diagnosis; and lately also in a patient affected with latent cancer of the intestine we were able, by means of this sign, to fix the exact seat of the disease.

TREATMENT OF TETANUS.—Dr. Jackson, late Presidency Surgeon at Calcutta, is cited in an article in the Lancet, upon the treatment of lockjaw (tetanic spasm), as having in a pamphlet, published as early as 1856, rejected the usual treatment of ice to the spine, with opium and camphor, as productive of no beneficial results in the majority of instances. "I have," says the Calcutta practitioner, "found cannabis indica and aloes decidedly more valuable, and have sometimes used anæsthetics with great benefit; but it was not until I had commenced to use the latter in combination with the former, supporting the patient with a good diet, quinine, and wine, and insisting upon perfect rest, that I met with anything like uniform success." Dr. A. P. Boone, of St. Kitts, W. I., records five cases, three of

them traumatic and two idioppathic, which terminated in recovery, under a combined anæsthetic and cannabis indica treatment, care being taken as to the exclusion of light, drafts of air and all distracting noises, and stimulants being freely administered. As the fatal termination is contingent upon apnæa, Dr. Boon recommends that artificial respiration should be commenced at once upon the apparent supervention of death, and persevered in until resuscitation is evidently hopeless. Dr. Watson Paul reports in the same issue a case treated successfully with combined anæsthetics and atropia.—Medical Record.

A NEW COUNTER-IRRITANT .- It is related by Dr. Coutivier, in L'Union Medicale, that the extract of pimento is a most admirable revulsive in a large number of cases, and may usefully take the place of mustard and flies. It is proposed by M. Lardy. The writer says it acts with great rapidity, ten to thirty minutes, according to the point of application and the delicacy of the skin. Its action is manifested at first by a sensation of heat, a slight smarting and redness. These go on increasing for about three hours, then they remain stationary, and the revulsive action is so continued as long as may be desired. Nevertheless, after twenty or twenty-four hours in the adult, eight to ten in children, it is better to remove the plaster, and put another alongside of it, if it be desirable to continue the revulsion. The heat and tingling produced are painless and free from itching. . . . The extract of pimento has a beautiful red color, identical with that of a dried fruit. Suitably incorporated in a plastic mass, and spread upon squares of paper, its application is very easy. It is unnecessary to warm it, for it adheres sufficiently to the skin; but it is well, on parts subject to movement, to fix it with a bandage just as a blister, Moreover, its action may be augmented or moderated according to the pressure. On removal, the heat and tingling may be immediately arrested by the application of a little starch.—Drug. Circ. and Chem. Gaz.

DIABETES INSIPIDUS CURED BY ERGOT.—The next patient, Joseph H., aged 21, was shown to you once before during the height of his malady. He had a family history of phthists, his mother having died with pulmonary consumption, and his father of some acute disease following a cold. He had never received any injury to the head.

and had never been sunstruck. Was uniformly healthy until May last. At that time he simply noticed that he was passing a good deal of urine. Since then, up to the time of his admission, he had fallen off rapidly in weight. He had also complained of the irritability of the neck of the bladder, but nothing had been found to account for the irritation. On admission we found he was passing from eight to ten pints urine daily, although at the same time he only drank from five to six pints of fluids (including milk, tea, and soup). The urine was acid, of low specific gravity 1.500, contained no particle of sugar, and was entirely free from albumen. We therefore recognized it as a case of diabetes insipidus, or polyuria, as it is sometimes designated. This disease is extremely difficult to eradicate.

We began our treatment December 1st, and directed him to take the fluid extract of ergot in one drachm doses three times daily; and subsequently increased to four doses; and for five days he took six drachms in the twentyfour hours. The effect was most marked. The amount of urine rapidly and steadily fell to five pints, and then to three pints; but before he had got down to the normal quantity we reduced the ergot, and afterward stopped it altogether and placed him on a little peppermint water, not so much, however, for its stomach as for its mental effect. He has now had no ergot for two weeks, and I can give you the gratifying information that the effect has been permanent. Since his recovery he has undergone an operation for phimosis, and now the irritability at the neck of the bladder has entirely disappeared, and he leaves the hospital perfectly well. We shall direct this patient to take half an ounce of cod liver oil two or three times daily as a general nutrient.—Canada Jour. of Med. Science.

HEREDITARY HEART DISEASE.—It is not often that an hereditary influence in the occurrence of heart disease can be distinctly traced to any wide extent, although it is often suspected. A remarkable example of such a transmission is recorded by Dr. Rezek, of Teplitz, in the Wiener Med. Zeitung. Of the pair from whom the family in question is descended there is reason to believe that the mother suffered from heart disease. They left two sons and five daughters. Of the sons, one is still alive, and suffers from

heart disease; the other is dead, and suffered before death from dropsy. His son, moreover, suffers from cardiac affection. The other son, still alive, has suffered for some. years from heart disease, but his children are healthy. Of the three daughters, one died from heat disease, and of her five children, all are healthy, but one has married and has had three children, two of whom are cyanotic. The second daughter of the original pair is still alive, and has suffered for many years from cardiac disturbances similar to those of her brother. Of her children, one daughter has died of heart disease, and another has married and has borne a child with well-marked congenital heart disease and cyanosis. The third daughter of the original pair has not suffered from heart disease. Care has apparently been taken in each instance to substantiate the diagnosis.—St. Louis E. M. J.

CONTRA-INDICATION OF IRON.—There are two different states found in women where iron is either totally contraindicated or to be given with great caution. The first is a condition of amenorrhea in florid, plethoric persons. The other is the opposite condition of menorrhagia in certain females. There are cases of menorrhagia associated with pallor and debility, where the usual compound of iron and extract of ergot is not so useful as a non-chalybeate treatment. In these cases it is not any imperfection in the process of blood manufacture which is to be remedied, for the blood is made rapidly and quickly, only to be lost at each menstrual period. It is here desirable rather to limit the rapidity of the blood formation, so that when the several vascular turgescence of the menstrual period comes, it will not find the blood vessels too distended with blood. This will lead to diminished catamenial loss, and so the blood waste will be economized. According to the experience of Dr. Brown-Sequard and Dr. Hughlings Jackson, iron does not suit epileptics. It increases the tendency to fits. It may improve the general condition, but it aggravates the epilepsy.—Dublin Medical Press.

THE ODORS ON PERSONS.—A curious contribution to neurology is contained in an article by Dr. Wm. A. Hammond, reprinted from the Transactions of the American Neurological Association. It is descriptive of the peculiar odors given off by the human body in certain conditions and affections of the nervous system. Thus he tells of a young

married lady, of hysterical tendencies, who, during her paroxysms, exhaled an odor of violets, which must have in some measure reconciled her husband to these unpleasant domestic occurrences. Another lady, the doctor reports on strong testimony, "during the venereal excitement gives off a very decided rosaceous odor." But the peculiarity is not always thus charming. A young lady, a school teacher, subject to sick headaches, evolves at these periods, horribile dictu, "an odor similar to Limburger cheese." Then there is "the odor of sanctity," which Dr. Hammond also touches upon, and which he does not identify necessarily with the agreeable one. His study is of the most curious.—St. Louis E. M. J.

Tinctures.—Beware of tinctures made from fluid extracts, unless the druggist uses those from a reliable manufacturer. Most of the tinctures now dispensed are about the strength of colored water. I lately called attention to this in the Journal of Materia Medica.

BOOK NOTICE.

PRESCRIPTION WRITING. Designed for the Use of Medical

Students who have never Studied Latin. By FREDERICK HENRY GERRISH, M. D., Professor of Materia Medica and Therapeutics in the Medical School of Maine. 1878. 16mo. Pp. 51. Portland, Me.: Loring, Short & Harmon. It has always been the custom to write prescriptions in Latin, and will probably continue to be, for the reason, if for no other, that prescriptions can thus be written more systematically, briefer, and more to the point. But, unfortunately, many physicians having a very good English education have no knowledge of Latin, and, unless they receive special instruction, their prescriptions would cause them to appear to a disadvantage-cause them to be classed among the ignorant. This little work is for the purpose of giving the needed instruction. It is much fuller in this respect than are the works upon Materia Medica and Pharmacy. The insight given as to the declension of nouns and conjugation of verbs, by which changes in terminations are brought about, will explain to students the principles involved, and will relieve writing prescriptions in Latin by the unclassical of much of what would otherwise seem arbitrary.

EDITORIAL.

To Subscribers.—Although our terms are in advance, yet a number of our subscribers continue to permit their subscriptions to remain unpaid, notwithstanding the middle of the year is close at hand. Our printer expects us to pay him promptly; but how can we do it unless we have the "wherewith?" This little hint, no doubt, will cause all who are behind "to come up to the scratch."

Nucleus of Red-Blood Corpuscles.—We have just had placed in our hands a copy of "New Preparations," published at Detroit, in which Dr. Chas. H. Stowell, of the Medical Department of Michigan University, gives his mode of exhibiting the nucleus in the red-blood corpuscles as he obtained it from Bættcher.

He uses a saturated solution of corrosive sublimate in 96 per cent. alcohol, and into fifty volumes of this so-

lution one of blood is to be rapidly diffused.

By this means the coloring matter of the corpuscle is taken out—bleached—and thus the internal structure brought more clearly to view. This solution preserves the corpuscles as well.

By agitating the mixture now and then the process is hastened, and in about twenty-four hours the corpuscles are allowed to subside, the superincumbent fluid poured

off, and pure alcohol added to a like amount.

In another twenty-four hours this is poured off and distilled water added. The corpuscles are now thoroughly washed, and are not acted upon by the water.

Professor Bættcher employs eosin, hæmatoxylin, picric acid and carmine as staining agents, but prefers the first.

He finds three classes of corpuscles:

- 1. Homogenous and shiny throughout.
- 2. Added to this a granular mass in the center, which stains readily.
- 3. Besides the cortical layer and protoplasm, inclosed in the latter is a marked nucleus and nucleolus.

Some blood was examined from a man poisoned with an alcoholic solution of corrosive sublimate, with the result of finding nuclei in the corpuscles. Toxic Gases.—At the recent meeting of the "Social Science Congress," held in this city, Prof. Bartholow read an interesting paper upon "Sewer Gas." In regard to the morbid effects of cholera dejections he said:

"During the last cholera epidemic in this city—the epidemic of 1865—1 studied the effects of decomposition cholera dejections on animals, chiefly dogs. They were constantly exposed to the gases arising from the decomposing material, and the matter was introduced into the stomach and other cavities of some of the dogs. The results were uniform: The dogs declined in condition, became sick, feverish torpid, lying down constantly, and when forced to rise trembled with weakness; the hair fell out, or was broken off, and remained harsh and dry; the eyes were watery and injected; the stomach and intestinal canal passed into a highly irritable state, nausea and vomiting constantly occurring, as well as a fetid diarrhea. When removed from the unwholesome surroundings in which they were placed, they improved immediately, and were soon restored to health. I presume no one here present can fail to see the similitude in the symptoms produced in man and the lower animals by the same cause."

In a part of his paper he called attention to the fact that about fifty years ago Parent-Duchetlet made the strange announcement that workmen engaged in vaultcleaning and in sewer cleaning at the great receptacles provided for this purpose by the municipality of Paris, were exceptionally healthy, and were free from maladies attributable to the occupation. This fact has since been supported by the constant observation of the officials, and has been formally proclaimed in official publications. As it seemed desirable to ascertain the influence of the gases arising from masses of fecal matter on our native workmen, Prof. Bartholow instituted careful inquiries among them. The result was that no sickness due to the calling has occurred among the men so occupied. The business, he says, is regarded by the men engaged in it as rather favorable to health. Many of the men have been so occupied for many years. This tallies precisely with our own observations. We are acquainted with a number of men who have followed vault cleaning for a subsistence for many years, and they are all in possession of vigorous health. We have known many individuals to become asphyxiated when first let down into a privy vault, but no deleterious effects followed upon the

In cases of suicide by burning charcoal, he says, it is carbon monoxide and not carbon dioxide—carbonic acid—that brings about the fatal result. The latter is by no means, he considers, actively toxic. The toxic effect of

carbon monoxide is due to its chemical action on the blood—depriving the red-blood globus of their oxygen. But we are disposed to regard this statement as rather having its source in speculation instead of demonstration. The want of oxygenation of the blood corpuscles, it is more probable, is due to the saturation of the blood with the dioxide, and that the toxic effects of the monoxide have

been spent upon the nervous system.

The unhealthy action of sewer gas he is disposed to ascribe to the compounds of sulphur and phosphorus with hydrogen. The most important member of the group he considers to be sulphuretted hydrogen. That this is a morbific agent there is no doubt, and that often it is the toxic element there is no doubt; but very frequently it can not be, is proven from the fact that most disastrous results sometimes occur from sewer emanations when there can not be found the slightest trace of it. In fact, it is very probable it was not the offending agent in the case of the gentleman and his wife whom he makes mention of who occupied apartments consisting of sittingroom and bed-room, with water-closet annexed, in one of our hotels. If it had formed much of the exhalations, its offensive odor would have made the rooms untenable. An amount scarcely appreciable by the chemist's art is almost unbearable to the olfactories.

How it is the vault cleaner has perfect health, while such as the lady whose case Prof. B. reports, daily exhibits increasing symptoms of failing powers, as loss of appetite, general malaise, a high degree of nervous irritability, constantly increasing weakness, is not well made out in the paper. The insusceptibility, which he speaks of, to the toxic effects of gases possessed by some persons, will explain it in some instances, but by no means in all. It would seem to us that in order for these gases to become toxic at all, it is necessary that the individual should be subject to the inhalation of them a greater part of the time, day and night; otherwise they are innocuous-that when a healthy atmosphere is breathed for different periods, longer or shorter, during every twenty-four hours, no deleterious consequences follow. In the case of the gentleman and lady referred to by Prof. Bartholow, while she suffered greatly from the close proximity of the watercloset, he suffered none at all, being engaged much

of the day and a part of the evening out of doors, while she was in her room much of the time.

Prof. Bartholow was very positive in his declaration that sewer gas never produces a specific disease. In other words, that not only that small-pox, measles, and scarlet fever are never caused by it, but that typhoid fever never originates from it. While all, no doubt, would agree with him as regards the first-mentioned diseases, many would be disposed to take issue with him as regards the last. But not only this, he does not believe that sewer gas is ever a carrier of materies morbi, or disease germs. He says: "It must be remembered that those are liquid matters, conveyed into and conveyed in sewers. The physical property of germs being such as I described, they can hardly be taken up with the gaseous matters, the products of decomposition."

The Professor closed his very interesting paper, which showed very considerable research and thought, by stating that the health statistics of all the great civies of the world, provided with sanitary organizations, show, unmistakably, that sanitary works, especially drainage and sewers, have lessened greatly the sickness and mortality rates.

Ohio State Medical Society.

This institution convened in Columbus on the 14th ult., and continued its sessions during the 15th and 16th. The meeting, though respectable in numbers, was not large, nor was there more than a small per cent. of the best medical talent of the State present, and only a part of that conspicuous in the discussion of professional subjects.

The Ohio State Medical Society was organized in 1846, and its founders set forth three objects to be aimed at by it. First, the mutual recognition and fellowship of the members of the profession; second, to promote the character, interest, honor, and usefulness of the profession by maintaining union, harmony, and good government among its members; and, third, to elevate the standard of professional education and advancement of medical science and literature.

In some respects the last meeting was a success. The greetings were cordial, reciprocal, and, at least on the

surface, sincere, and the entertainments arranged by the profession of Columbus were every way worthy the occasion—so said every one. The failure as a scientific and literary association was more apparent than at former meetings. So marked was it this time that a resolution was passed declaring that the Society would not hereafter accept invitations to visit when such acceptance would lead to the neglect of important business; but the failure resulted from organic defect, and therefore can not be remedied by this or any similar resolutions. The Society is not now, nor has it ever been, the representative of the organized profession of the State. It is the creature of a few individuals who had become prominent in the Medical Conventions which were held annually, from 1827 to 1850, and who were for the most part either college teachers, or aimed to be; whose professional robes were thought to be broader and whiter than other men's, and who desired to raise themselves above their plebeian associates. The founders intended that the Society should always remain select—a sort of royal institution, into which no commoner should be admitted until he had distinguished himself in the convention from which he had risen. Continuing members of the State Conventions year after year, they skimmed them, taking the cream for the new organization; but they skimmed so deeply that after four years' effort there was not difference enough to justify any further continuance of the two organizations—the connections were discontinued, and the new Society became the only State medical organization in Ohio. But, at the time it was not adjusted to the demands of the profession of the State, and now, after an existence of nearly a third of a century, it is and has been without such adjustment; and, instead of promoting the professed objects in its creation, it has, in many instances, stood in the way of their accomplishment by other means. The profession needs and should have an organization, having a working relation to the county and other local societies, in which no paper should be read which had not been passed upon and referred to it by a local society, and no report should be made upon any professional subject, the material for which had not been communicated from the county and other local associations. The papers and reports, after being discussed by the State Society, should be referred to an Editing Committee, composed of one member for

each of the practical departments of medicine, whose duty it should be to arrange the papers and reports for publication. Each member of every local society, and none others, should, by virtue of his membership there, be a member of the State organization; and the number of transactions printed should be equal to the aggregated membership of all the local societies; and the assessment for defraying expenses of the Society, including price for publication of transactions, should be upon the local organizations, the amount fixed according to the number of members in each. All the members should have the right to participate in the discussion of papers and reports, but all voting for officers, and on resolutions involving the expenditure of money, should be by the local societies, and the extent of the vote of each be determined by its members.

A State organization, the outlines of which are here roughly sketched, would rapidly develop and bring to the surface the medical talent of the whole State, the attendance upon the meetings would be largely increased, and the interest in the sessions greatly enhanced.

The Society would then have something more to do than to meet, organize, excuse delinquencies, form combinations, appropriate honors, eat, drink, and adjourn to meet again.

R. C. S. R.

Messrs. Chas. A. Spencer & Sons.—Just as we are closing up the last form of this month's News, we learn that the above distinguished makers of microscopes and accessories have dissolved their connection with the "Geneva Optical Co.," and will continue their business by themselves at Geneva, New York. They propose that their future work will excel any of their past. The powers of their finest class of lenses, from the ½th in., are over 180° angle of aperture in air, and all of them, including the ½th, as immersions, will resolve, as stated in their circular, am. pellucida either by daylight or lamplight, and all other known tests.

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PRIGINAL CONTRIBUTIONS.

Report on Advances in the Practice of Medicine.

John S. Apperson, M. D., Town House, Va., Reporter.

Read before the Medical Society of Virginia.

In compliance with the requirement attending the appointment made at the last annual meeting of the Society, as Chairman of the Committee to report On Advances in the Practice of Medicine, I beg leave to submit the fol-

lowing:

Although the practice of medicine is now restricted to a separate department in the knowledge which relates to the morbid or abnormal conditions of life—so varied are the subjects embraced therein, and so rapid and extended the progress of research in all the particular forms and species of disease, and the circumstances giving to each its particular individuality—the work of preparing an acceptable report for even a single year is no inconsiderable task. Another difficulty presents itself in the time being too limited for the full determination of the result of any experiment or theory which may have been tried or suggested.

We are well aware that the history of medicine, from its earliest date to the present, is everywhere interlined with unmistakable evidences of a speculative tendency which enslaves the human mind in a manner both astonishing and curious; and the lapse of time alone is adequate for its emancipation from the bonds which, for the time being, held so firmly to the dominant idea. If we glance, in a most cursory way, back to the period when the science of medicine began to emerge from the thrall-dom of ignorance and superstition, we can not fail to be

impressed with what strong fidelity the partisans of each sect labored to establish their own peculiar doctrine, and the favorable result to the general advance springing from each conflict. We see the dogmatism of one epoch met by the empiricism of another, and the humoral pathology of yesterday antagonized by the solidism of to-day. Broussais supplanted the doctrine of "excitability," so strongly urged by Brown, with his own theory of "irritability," and labored in the establishment of a "physiological system of medicine in opposition to the 'ontological' school of Pinel." The authority wielded by the declaration of Cullen, that it was "the duty of the philosophical inquirer in medicine to control his observations by his theories, and not his theories by his observations," under the light of advancing knowledge, lost much of its influence by the later teaching that "Theory was useless except in so far as it rested on fact." We see a movement backward is sometimes made as if to gather up and utilize that which is good of what has, from old, been neglected or lost. That leading principle in the management and treatment of disease, now so much esteemed because it teaches the necessity for the preservation of the vital forces by tonic remedies, stimulants, nutritious and easily digestible and suitable diet, and comfort in all the surroundings, as well as a strict avoidance of the damaging effects of potential therapeutic agencies, has its prototype in the successful practice of Asclepiades long before the commencement of the Christian era. "Perkinism" of nearly a hundred years ago, which fell into desuetude almost with the expiring breath of its originator, is brought again into prominent notice by the labors of MM. Burcq, Charcot and others. What was "Perkinism" three quarters of a century ago is "metallo-therapie" now.

Thus we find transition back and forth has marked the progress of medicine to such an extent that the superficial or careless observer may readily conclude that the apparent instability of the past is indicative of a doubtful future; but, in the language of the celebrated Galileo, when forced on bended knees to recant his favorite theory of the stability of the sun and motion of the earth, as he rose from the ground he attested his abiding faith in the truth of his opinion by exclaiming, in an undertone: "It does move, for all that!" Whatever the theory or system, or peculiar tenet prevalent out of firm adher-

ence on the one hand, and bold opposition on the other, earnest labor has been induced, patient, thoughtful investigation pursued, and incontestable facts established which give to every department of medicine a degree of certainty not surpassed by any other branch of science.

The past year, like its predecessor, recording no "brilliant or remarkable advance in medicine," this paper might with propriety be concluded in the same laconic style pursued by one of the committees appointed a few years ago by the American Medical Association, by reporting simply progress. But with rotation in office as our political creed, and the hope that the appointment for the ensuing year may fall into abler hands than mine, I shall notice, as briefly as may be, a few subjects in Special Pathology or Practice of Medicine, as an earnest of the appreciation entertained by your reporter for the faithful discharge of every duty imposed by the requirements of this Society.

It is proper to state here, that in the preparation of this report General Pathology, or Principles of Medicine, as defined by recent authors, is not embodied, except in connection with individual diseases; and that Therapeutics, as a part of Special Pathology, is included only in its application to the treatment of disease, and not to the modus operandi of medicines, which belongs to another

section.

TYPHOID FEVER, particularly its mode of origin, is still eliciting the most careful attention of those interested in the study of etiology, who suggest many important questions connected with the causation of all zymotic diseases.

Bristowe, in his late work on *Practice*, adopts the views of Dr. Budd, and says: "The essential cause of enteric fever is not a mere inorganic or even organic result of decomposition, but (like other contagia) is an organic living particle, which has special endowments and unlimited powers of multiplication—not as the product of healthy ordure, but as a specific virus yielded by the bowels of patients suffering from enteric fever, and by them alone." In support of this opinion, he cites the result of certain investigations by Dr. Klein, which were embodied last year in the report to this Society by the section on Hygiene and Public Health. He claims, furthermore, that this specific, but, at the same time, innocuous, organized substance, after its discharge from the bowels, becomes

virulent; and diffusing itself throughout the fluid media, to which it gains access, and imparting to them its specific properties, finds its way into the system through the alimentary canal by means of contaminated water, or of milk to which contaminated water has been added; or the effluvia emanating from cesspools, sinks, etc., are inhaled with the breath, and thereby gain admission to the alimentary mucous membrane; and that the intestinal lesions are to be regarded as the points of inoculation. (Bris-

towe's Theory and Practice of Medicine, p. 212.)

If we would accept these views with regard to enteric fever and other cognate affections—the dependence of the disease on living organisms having a specific nature, manufactured within or developed without the body, entirely and alone under the operations of excremental decomposition or sewage—as complete and conclusive, a vast amount of thoughtful and laborious research would be brought to a close. But we are met by the fact, as set forth by Dr. Bramblett, in a communication to the Virginia Medical Monthly for May, 1877, that in sparsely settled districts there are isolated cases of enteric fever, remote in time and space from any other cases of a similar nature, occurring independently of any tangible evidences of local contamination of air or water, and under conditions which preclude the supposition that the disease was imported from a distance. Or the disease, after starting in this way, or at some point where organic impurities other than those from excremental decomposition -such, for instance, as from felled timber, accumulated sawdust, decomposing drift-wood and putrescent vegetable substances of various kinds—are abundant, is communicated by contagion or by epidemic influence from one person to another, until quite a number of the inhabitants of a given area have been stricken down, and finally ceases, as far as one can judge, of its own accord, and does not appear again for a lengthened period of time. These facts are of too frequent occurrence, especially in the rural districts, to require more than a mere reference to them in this place; and they seemingly antagonize the opinion that the pathogenesis of typhoid fever is dependent solely upon excremental decomposition, or that it is propagated only "by continuous development either in or out of the body." Defective drains, offensive out-door privies and foul sinks can not be held

responsible for poisonous emanations or the propagation of dangerous diseases where they do not exist. In large towns and densely populated cities they do, doubtless, afford the more assignable cause; but up in the mountains, 2,500 feet above the level of the sea, where the air is cool and bracing, the water supply abundant and pure, and the streams descend rapidly, they appear, to some of us, at least, the less assignable cause.

That typhoid fever and malarial fever do not prevail in the same locality, at the same time, seem now to be gen-

erally admitted.

In the treatment of typhoid fever, have any important changes been made? The application of the cold bath has both its advocates and its opponents. MM. Jaccoud and Fereol advise its use in the strongest terms. The latter not only uses it when hyperpyrexia is present, but he regards continuous delirium, convulsive movements, carphology and extreme frequency of the pulse as indications for its use. Nor is he deterred from applying the bath when adynamia, pulmonary congestion, hæmoptysis or broncho-pneumonia are present. He claims to have "reduced the mortality in 153 cases treated, in 1874 and 1875, by this mode, to 18.95 per cent., when before the cold bath was used it was 27 per cent.—not a single case of perforation occurring among his cold-bath patients, while this complication caused death in three cases where the bath was not used. (Med. Times and Gazette, in Abstract Med. Sciences, February, 1877.)

On the other hand, the Virginia Medical Monthly for June, 1877, page 194, contained a translation from the French, wherein M. Peter opposed the use of the cold bath on theoretical grounds. The principal objection urged was the danger of causing intestinal congestions. It is stated that nasal hemorrhages, and also hemorrhages from the bowels are much more apt to occur in those patients treated by the cold baths. Biermer, a great partisan of this mode of treatment, states that he often observes intestinal hemorrhages, and that death, in a certain number of cases, may be fairly attributed to this account.

"Statistics show," says M. Peter, "that the treatment does not give such results as could be desired. At Nimes, the cold-bath treatment has furnished a mortality of 29 per cent. Brandt, himself, has 15 deaths in 124 cases observed in hospitals; Biermer had a mortality of 15 per cent.; MM.

Raynaud and Fereol, who employed cold baths in their practice, had a mortality of 14.96 per cent. and 15.66 per cent., respectively, while MM. Doos, Peter and Mesnet, who employed the traditional mode of treatment, have had a mortality of 13.51, 13.69 and 14 per cent." Sudden death from syncope while in the bath has also been ascribed to the bath.

With reference to the use of the bath in the fever, Bristowe, in his late work, simply remarks that "The use of the cold bath has been frequently beneficial, especially in cases in which the temperature reaches or exceeds 104° F. It is best supplied by means of baths, the temperature of which, to begin with, should be 10 degrees or more below that of the body, and then gradually increased to about 68°—immersions being continued for about half an hour, or until the temperature of the patient, as ascertained by the thermometer in the mouth or rectum, has become sensibly reduced." (Theory and Practice of

Medicine, page 222.)

Salicylic acid alone and in combination with soda has been tried by MM. Robin and Levin, and by Dr. Murchison and others, and is found, while it does act as an efficient antipyretic, to be hurtful in consequence of serious troubles occasioned in the organs of digestion and in the brain. Riegel believes it produces a more decided effect than quinine, but not so lasting as that of the latter drug. Schroeder's conclusions, however, are at variance with those of Riegel, in expressing doubts if salicylic acid, in this disease, has any antipyretic action at all. Of the 160 cases treated by him with the acid and the soda salt, "the death rate was 19.4, while of 211 cases treated by the 'expectant' plan with baths, it was 14.7. He considered the greater death rate in the former case due to the paralyzing action of the drug on the heart." (Va. Med. Monthly, July, 1877.)

Subnitrate of bismuth is extolled by Dr. Martineau in 15-grain doses for intestinal hemorrhage of typhoid fever. In the practice of your reporter, it was used in several cases when the gastro-enteric symptoms were prominent—particularly persistent diarrhea—with apparent good

effect.

Acute Articular Rheumatism.—The essential conditions of this disease are so peculiar and anomalous that a perplexing diversity of opinion has been a striking charac-

teristic of all written expressions with relation to its nature, cause and treatment. Without noticing, in an especial manner, any of the well-known hypotheses which, from time to time, have been given in explanation of the morbid manifestations attending the disease, I will call attention to an extract taken from the London Medical Record, July 15, 1876, regarding its pathogenesis, as evidenced by an analysis of 246 cases occurring in the practice of Prof. Beneke: "Of these [246 cases], sixty-four were either, from the first, cases of osteo-arthritis, or passed directly from the acute into a chronic stage, in which conditions they first came into notice. No cause whatever for the disease can be discovered in thirty-two cases; in the remaining 214, a directly hereditary or family tendency could be traced in seventy-four; while in the other 140, sexual excesses, exhaustive confinements and lactation, uterine diseases with functional disturbances consequent upon over-exertion, and less frequently rickets, cholera, epilepsy, meningitis (in early life), gonorrhœa, syphilis, measles, etc., preceded the development of the disease." The author regards these as so many conditions exercising upon the nervous system a depressing influence, which, acting upon the body in a certain state of preparation, leads to the production of rheumatism. This state of preparation consists in an increased formation and accumulation of organic acids, the result of the interference in the metamorphosis of muscular tissue, which disturbed innervation brings about.

Here is an important and interesting question of inquiry bearing on the disturbances of nutrition in connection with nerve pathology. The suggestion that the primary seat of the disease is in the nervous system, and that the blood is secondarily involved, is not new; while malnutrition, consequent upon deranged digestion, has been assigned as a cause quite sufficient to occasion the local defects noticeable in attacks of rheumatism. These opinions, based heretofore, mainly upon clinical observation, may, in the future, find support, and gain prominent strength from the labors of Mitchell, Bulkley and Charcot—especially the latter—on disturbances of nutrition following

diseases and lesions of the nervous system.

In the *treatment* of acute rheumatism, the use of *salicylic acid* has grown rapidly into favor. A paper read before the Royal College of Physicians in Ireland, by Dr.

J. W. Moor, December, 1876, gives the following conclusions as to the value of salicylic acid in the treatment of ten cases:

1. Salicylic acid seems to be a valuable and almost specific remedy in the treatment of acute rheumatism.

2. After the administration of a few moderate doses of five grains each, given at hourly intervals, a marked amelioration of the symptoms usually occurs. Thus, the temperature and pulse begin to fall, the swelling and pain of the affected joints subside, and the patient sleeps.

3. The above doses—i. e., of five grains each—are quite sufficient to procure an impression on the disease, while the patients make little complaint either of the frequency

of the doses or taste of the medicine,

4. Pushed too far, it sometimes causes ringing in the ears and diaphoresis. Under these circumstances, its administration should be temporarily suspended.

5. To prevent a relapse, it should be given for some

days, but at gradually lengthened intervals.

6. Finally, as to its probable action as a preventive of dangerous cardiac lesions of acute rheumatism, the author could only indorse the views of Dr. Coats, of Belfast, in a recent paper: "I think it can hardly be denied that medicines which cut short the disease, as I believe salicylic acid does, must render the liability to these complications less." (Extract from Medical Times and Gazette, December 30, 1876, in Monthly Abstract Medical Sciences, February, 1877.)

All observers agree that when the drug is given in large doses or frequently repeated, it is liable to provoke a peculiar train of nervous symptoms, such, for instance, as humming and buzzing in the ears, deafness, strange, restless delirium, involuntary discharges of urine and fæces, an olive green color of the urine, when the drug should be stopped; and if resumed again, it should be given in

smaller doses and less frequently.

Dr. F. Reigel, of Cologne, gives encouragement to what is called "mechanical treatment of rheumatic fever." It consists in the use of paste-board splints lined with cotton wool, and fastened to the extremities by means of straps and bandages, and are allowed to remain for several days after the pain has subsided. In St. Bartholomew's Hospital Reports, Mr. Robert Bridges gives the history of one case so treated with the view of relieving intense

pain, which it not only did, but a diminution of the temperature was also apparent, and a good recovery followed.

LEUCOCYTOSIS.—Among the morbid conditions of the blood, that known as leucocythæmia, or leukæmia, is coming into prominent notice—more so, perhaps, than at any time since 1845, when Bennett and Virchow published, for the first time, their observations with regard to the pathological conditions of those cases in which there is a relatively abnormal disproportion between the white and red globules of the blood, accompanied also by progressive enlargement of the lymphatic glands, the spleen and the liver.

Notwithstanding the resources of art have thus far availed nothing in its treatment, the importance attached to it as a disease of the gravest character, and the attention it is now receiving at the hands of the most eminent pathologists of the day, entitle it to a notice in this report.

The following indications, drawn from the written statements of recent observers, are given, with the purpose of calling attention, in an especial manner, to the nature and treatment of this complaint, as yet so imperfectly

understood:

1. The disease (leucocythæmia—white cell blood) is almost constantly associated with enlargement of the lymphatic glands in various parts of the body and of the

spleen and liver.

- 2. The attendant morbid anatomy is that belonging to the lymphomata in general, but its chief characteristic is an increase of white globules of the blood to a ratio of at least one to twenty of the red. This ratio may increase, however, to the extent when the white globules outnumber the red.
- 3. The disease differs from simple anæmia in this: In anæmia (except when there is fatty degeneration, lesions of internal organs are not common unless in those cases of pseudo-leukæmia, when there is an apparent transition of one disease into the other) the blood becomes more and more watery, and the corpuscular elements disappear in equal ratio; while in leucocythæmia, in addition to the enlargement of those internal organs before mentioned, a relative abnormal disproportion is kept up between the red corpuscles and the white, by a progressive decrease of the former and increase of the latter.

4. Three varieties of the disease have been noticed in the text-books; to-wit: (1) Splenic leukæmia—the spleen alone involved; (2) Lymphatic leukæmia—the disease limited to the lymphatic glands; (3) When both the spleen and lymphatic glands are implicated; and to these we may now add another, (4) Medullary leukæmia as described by Neumann, in 1869, and sanctioned by more recent observations, in consequence of the large numbers of leucocyte-like cells found in the marrow of bones in necropsies following the disease.

"Virchow distinguishes lymphatic from splenic leucocythæmia by the circumstance that in the former the white corpuscles are generally smaller than the normal white corpuscles, while they contain for the most part solitary and comparatively large nuclei; whereas in the splenic form of the disease the leucocytes more closely resemble those of normal blood. * * * When the spleen and lymphatic glands are both affected, both varieties of leucocytes may be found with the blood." (Bristowe's Theory

and Prac. of Med., page 73.)

5. According to Dr. Choostek, the disease, in one hundred and eleven cases, the record of which he had selected, occurred in males seventy-five times, and in females thirty-six times. The younger the patient, the sooner the disease terminated—eight years being the longest time

before the fatal result was reached.

6. It has been suggested that "observations of this disease do not appear to have thrown much light upon the physiology of the spleen. The great objection to the theories of Virchow and Bennett, that the destruction of the red blood disks, or the manufacture of white ones in excess, results from hypertrophy of this organ, exists in the fact that hypertrophy very frequently takes place without corresponding blood change." The fact also, that the spleen may be removed from dogs with impunity, and even from men with no subsequent ill effects, is cited in evidence that we are yet in ignorance of the essential nature of the disease, and also of the office of the spleen. (Dr. Curtis in Journal of Medical Sciences, October, 1876.)

7. Prognosis in the disease is of the gravest character—no well authenticated case of recovery having been recorded. In many instances, there is, under proper treatment, an amelioration of special symptoms, such as falling off in the number of leucocytes, softening of the ex-

ternal glands, and reduction in the size of the spleen, but this was of temporary duration only, and fatar results have

followed in every instance.

8 In the treatment, ferruginous tonics, bark, quinine, iodide of potassium, and cod liver oil, with properly advised hygienic surroundings, have been tried. Under the recommendations of Dr. Broadbent and Dr. Wilson Fox, phosphorus is used in pill, or preferably in capsules. At first, substantiated results in its favor were promised, but latterly the verdict, "no influence," has been rendered. Considerable benefit was obtained in two cases in the practice of Professor Mosler by transfusion, but owing to the tendency to hemorrhage, this is not generally advisable.

Faradization and the internal administration of piperine, oil of eucalyptus and hydrochlorate of quinine are advised by him as worthy of further trial. (Medical Times

and Gazette, March 3, 1877.)

A FEW POINTS IN THE TREATMENT OF PHTHISIS PULMON-ALIS.—In consideration of the fatality and prevalence of this disease, every suggestion relating to its management is specially interesting; and, notwithstanding we can hardly expect to subdue at will an enemy so subtile and insidious, yet, when we compare its duration now to what it was half a century ago, the beneficial results flowing from an improved system of treatment are indeed a source of great satisfaction.

Dr. Williams stated in 1871, that during his experience of forty years, the average duration of life in phthisis had been more than quadrupled—i. e., had been raised from two to eight years; and Dr. Flint more recently remarked that, "the diminution which has already taken place in the death-rate from this disease, affords grounds for the hope that its formidable character may be still further

mitigated."

The effects of exercise as a remedial measure have for a long time been accorded a distinct place in the treatment of phthisis. It was a standing injunction to phthisical patients to follow as far as practicable an active outdoor life; but more recently the importance of rest is advocated upon the ground that "the muscular force is evolved, not from disintegrating muscular tissue, but from the oxidation of carbo-hydrates, and the production of carbonic acid and water;" and that "during rest, only the

consumption of material sufficient to maintain the temperature of the body and to supply the force for cardiac and other movements is required." These and other physiological data are given by Dr. Bartholow as justifying the following conclusions on the subject of exercise in phthisis:

"1. Active exercise is hurtful in phthisis when there is present any considerable fever. Quiet of mind and repose of body, as far as they can be secured, are essential to the

curative treatment of this disease.

"2. In chronic cases, with limited lesion, and consequently slight fever, moderate exercise may be serviceable, in so far as it improves the appetite and the digestion.

"3. If exercise is considered desirable in phthisis, it should never be violent or protracted, and it should be taken, as far as practicable, when the body is free of fever." (American Journal of Medical Sciences, April,

1877.)

In the management of night-sweats of phthisis, atropia, although suggested several years ago, is still growing in According to Dr. M. Fothergill (Practitioner, December, 1876), it is especially useful in that class of cases where one lung is being involved in a slowly spread ing pneumonia. "There is a fast pulse over 100, a temperature over 100°F., cough, profuse night-sweats and rapid wasting. It is in these cases the utility of belladonna is so well seen. As soon as the profuse sweats are checked, the patient begins to pick up; the appetite returns; food is better assimilated; the sleep is refreshing; and the mind is much relieved. In fact, the arrest of the drain of salts by the hydrosis at once inaugurates an improvement." Dr. Bartholow, after quoting the above paragraph from the paper of Dr. Fothergill, says: "I am able to confirm in every particular these important observations; my experience has been identical."

The quantity of the drug recommended as safe is from $\frac{1}{75}$ th to $\frac{1}{25}$ th of a grain of atropine, or from twenty to thirty-five minims of tincture of belladonna. The atropine should be given in pill form, and the belladonna in dilute phosphoric or sulphuric acid, and may be taken at bedtime, and when the patient wakens at two or three in

the morning.

When the cough at night prevents sleep, opium or

morphine may be given with the belladonna. (American Journal of Medical Sciences, April, 1877, page 525.)

In the treatment of phthisical cavities, Dr. R. Douglas Powell, of Brampton Hospital, calls attention (Lancet, August 4, 1877) to the necessity of allaying the cough by the free use of soothing cough-mixtures, because the act of violent coughing interferes very much with the healing process. The vapor of iodine, glycerine, of carbolic acid or tar-water are advised as having alterative effect on the internal surface of the cavity.

Excessive expectoration, according to Dr. Daremberg, affords a ready outlet for almost as large a quantity of phosphates and chlorides as the urine, and is not only one of the ways by which denutrition is expelled, but is one of the causes thereof. Beech tar, creosote in from three to six grains per day, is proposed as an appropriate remedy when expectoration is great. (Extract from London Medical Record, November, 1876, in Abstract Medical Sci-

ences, January, 1877.)

In this connection, I deem it proper to make only a simple reference to an intensely theoretical article in the October number, 1877, of the Virginia Medical Monthly by Dr. C. G. Polk, of Philadelphia, advocating the use of protagon and glycerite of kephaline in the treatment of pulmonary phthisis. These substances, I think, are not familiarly known to the profession, and time and further observation are necessary before their value can be determined upon. Suffice it to say, the paper of Dr. Polk contains interesting and well-arranged views on the subject, and should be taken into thoughtful consideration by every practitioner of medicine.

MORPHIA-MANIA, or the disorder induced by the habitual use of morphia, has, perhaps, very little claim to notice in a summary of the advances in the practice of medicine; yet, in consequence of the rapid increase in the consumption of opium and its various preparations, both as a means of cure and palliation in disease, and as a vice becoming more and more prevalent in every grade of society, we may expect, erelong, to see the disorder assigned an

appropriate place in every work on Practice.

As regards the evils resulting from the excessive use of opium, while they are not, perhaps, so apparent, and may be less in extent than those attending the use of alcoholic liquors, in effect they are doubtless but little

less. The real and fancied wants of suffering humanity, the encouragement given too often, we fear, by our own unguarded prescriptions, together with the facilities afforded by every country store for obtaining the drug, are so many incentives operating in favor of its use; and unless legislative action will assume, in some way or other, to restrict its indiscriminate sale, it may be found not far hence to be a most formidable national evil.

Prevention here will not only be better, but easier than cure; and the profession may, in the absence of other things, effect much good by discouraging, as far as personal effort and influence will go, its too frequent use in the higher forms of disease, and always when taken as an habitual stimulant.

When the habit is once formed, rescue is difficult. Professor Leidesdorf, in a paper read before the International Royal Society of Vienna, reports the results of his observations in five cases of morphia-mania which had occurred in his own practice in the course of the last year.

The quantity of morphia used hypodermically was from 6 to 37 grains daily. The sudden withdrawal of the morphia produced diarrhœa, mental irritation, persistent loss of sleep with hallucinations, melancholia, increased sensi-

bility and collapse.

The length of time the drug had been taken in each case is not stated. The treatment consisted in a gradual withdrawal of the opiate with hydrate of chloral, wine, warm baths, persuasion, restraint, watching, etc., and resulted in curing the habit in from eight days to eight weeks. One case relapsed and committed suicide.

Dr. Leidesdorf says: "The patient must be entirely under the control of the physician, as deception is otherwise certain; all the patients had their syringes and a supply of morphia for several weeks. A careful watch must be kept up during the treatment (eight or ten days) to

prevent attemps at suicide."

Dr. Winternitz says that 'in all cases of morphia mania the lowering of the temperature by baths to 68° to 77° was borne ill or not at all; while, on the other hand, the application of hot cloths along the cervical spine had some effect in reducing the desire for morphia." (Extract from London Medical Record, in Abstract of Medical Sciences, January, 1877.)

Absolute control of the patient is a sine qua non in the

treatment, and this can rarely be obtained outside of a well-arranged hospital, to which such patients, as a rule, ought always to be sent. Not the patient alone, but anxious and sympathizing friends, are as little to be trusted sometimes as the patient himself.

All of which is respectfully submitted.

Unconscious Cerebration and Dreaming.

By J. H. Cox, M. D., West Virginia.

Unconscious cerebration is the elaboration of ideas by the reflex action of the cerebrum. On the tablets of the brain every thought and incident are indelibly registered; and the delicate chemistry, that takes place in its deep recesses, may, under certain circumstances, map out to the mind our whole lives. As the fine tracings of sympathetic ink are developed by reagents, so every impression received, and every shadow that crosses the mind, may again stand out in relief in a moment of time.

Things that have long been forgotten often reappear to the mind as a gleam of sunlight; and it is familiar to the student to find, after laboring hard and late without making a solution, that the automatic action of the mind sometimes goes on during sleep, and on his rising in the morning has accomplished what it was unable to do under volitional effort. We are told that some of the master-strokes of Mozart, and others, were elaborated during their hours of sleep. Within the brain there is a store-house, the sum of our past experiences; and among this discordant assemblage of facts the mind may automatically enter and produce the highest intuitions of genius—weigh circumstances, trace out results, and arrive at conclusions at which it would be incapable during the working hours.

In all ages, and among all people, there has been a belief, to some extent, in the truth of dreams; and from a belief so general among people of different intelligence, it would seem that there must be some foundation for it. Charging that it is superstition, or a mere coincidence, does not account for the facts in the premises, and, as men of science, it falls on us to explain the phenomena on principles of philosophy. When the physiology of the mind is brought to bear on the subject, there is perhaps

no instance in which the future has been revealed by a dream, but can be explained on scientific principles, without the intervention of demonology or occult spiritual

agency. While a thousand dreams may be the unmeaning waves of disconnected thought, there are many well-authenticated in tances in which persons have received an intimation during sleep of the circumstances and time of their death, and the termination of important transactions. When the germs of disease are fixing themselves on important organs, as a smothered fire that is yet undeveloped, the mind, relieved of volitional labor and restraint, may take cognizance of the havoc going on within, and by a reasoning process, or by an intuition, form a conclusion, that on a certain day or hour the body shall be smitten down with disease or death. Unite to this dream the influence of expectancy, and it will have a strong tendency to come to pass at the time indicated. When a fatal disease seizes on the body, the practical physician may prognosticate death in an hour, a day, or a year. So may the mind, during sleep, enter into the deep recesses of the body, and prognosticate the result of causes already in operation, but unperceived in our waking state.

In the great antagonistic concerns of life, we may be led to believe that we have a very hopeful case, and poorly consider the causes that may operate against us. The general, encamped in the midst of his host, may not well consider the forces that may be brought for his overthrow; but his mind, unbiased in sleep, may elaborate thoughts from facts stowed away and unattended to in his brain, that will be to him as the "handwriting on the wall."

In our waking state there is ever a tendency of the mind to myth-making, by which our ideas are robed in gorgeous colors and airy phantasms. In the dreaming state this tendency is exaggerated, by which our visions are associated with strange external or imaginary things. Some things of which to dream have been regarded by common consent as favorable, and others as unfavorable. If the mind in sleep takes cognizance of a subject upon all the data treasured up in the brain, the conclusion may be correct, while the same individual would be unable to arrive at the truth when awake; and this conclusion may be associated with objects that the person has been in the habit of regarding as favorable or unfavorable, which ob-

ject acts when awake as a hieroglyphic, expressing the conclusion, while the process by which it was arrived at is lost.

If all the contingencies that bear on a future event could be attended to, and duly weighed, it would be no difficult matter to prophesy of the future result. We can read the future in proportion as our knowledge increases and our minds expand. To a person who had never known of mathematics, astronomy, or an eclipse, it would appear a mystery, beyond human ken, to foretell that a dark body would cross the disk of the sun at a particular hour or minute. The termination of all the affairs of life could be predicted with the same certainty, if the mind could be brought to fully weigh all the facts; and these facts are frequently unconsciously stowed away in the deep labyrinths of the cortical substance of the brain, and may be utilized in unconscious ideation or cerebration.

Translations from French Journals. By R. B. Davy, M. D., Cincinnati.

THE GERM THEORY AND ITS APPLICATION TO MEDICINE AND SURGERY Proceedings of the Paris Academy of Medicine of May 7, 1878.

After the first communications of M. Pasteur on fermentation, in 1857-58, it may be admitted that the ferments, properly speaking, are living beings; that the germs of microscopic organisms abound on the surface of all objects; that the theory of spontaneous generation is chimerical; and that all the liquids of the economy do not undergo their alterations in contact with the air. In 1877, M. Pasteur demonstrated, by indisputable facts, that charbon is the disease of bacteria. To-day it is the septic vibrio which is submitted to analysis and rigid experiment.

The first crops having been negative, M. Pasteur thought that perhaps the vibriones of septicemia and butyric fermentation were the same. This interpretation was confirmed by the facts. But if the vibrio is killed by oxygen, how are we to explain the persistence of septicemia in atmospheric air? M. Pasteur replies that his affirmations are not applicable to all cases. They are true if the cystic liquid contains only adult vibriones in the

process of generation by segmentation. Exposed to the contact of the air, the adult vibriones only disappear and lose their virulence; while the germ corpuscles, on the contrary, are preserved and are capable of new inoculations. If abdominal serum, containing septic vibriones in the process of generation by segmentation, is taken in sufficient quantity and exposed to the air, two remarkable phenomena take place, one in the superior and the other in the inferior stratum of the liquid. In the superficial stratum the vibrio dies, but in the deep one the young vibrio continues to multiply by segmentation. These results enable us to understand the fertilization of putrescible liquids with the dust of the atmosphere, and the prevalence of putrid diseases at the surface of the earth.

In addition to the adult vibrio and its germ, the existence of a specific virulent matter, solid or liquid, can not then be admitted. The multiplication of the vibrio by segmentation is accompanied with a disengagement of carbonic acid, hydrogen, a little nitrogen, and a very small quantity of putrid gas. The formation of these gases ceases with the transformation of the vibrio into germ corpuscles, and explains the tympanitic condition of animals, dead from septicemia, as well as the emphysema of

the connective tissue.

With regard to the dangers of these germs covering the surface of all objects, particularly in hospitals, M. Pasteur advises the use of the most suitable instruments; washing the hands and passing them rapidly over a flame; the charpee, bandages, and sponges used should be exposed to a temperature of 130° to 150° cen.; and the water employed should be submitted to a heat of from 110° to 120°.

Along with the bacterium of charbon and the septic vibrio, M. Pasteur has found another vibrio to be at the

same time aerobic and anaerobic.

This third kind is capable of multiplying itself in the living body, and provoking a pathological condition different from the diseased pathological conditions which arise as a result of inoculation with the charbon bacterium or septic vibrio. This is, according to M. Pasteur, a proof that the pus formed by our organism has a special connection with its structure. This pus, containing living microscopic beings, which flourish in the animal economy, cause greater disorders than pus which may be called

pure. Not wishing to discuss the formation of pus, M. Pasteur thinks that the red globules of the blood bring about pus globules, by a simple transformation of the former into the latter. The microscopic generator of pus may be associated with the septic vibrio, or the bacterium of charbon. This association of two organisms admits of the belief of the two distinct diseases being superimposed, and, as a consequence, the production of that which may be called a septicemic purulent infection, or septicemic purulente, and purulent charbon, or infection purulent charbonnense.

In conclusion, we can produce at will purulent infections exempt from every putrical element, putrid purulent infections, the purulent infections of charbon, and the different combinations of these troubles according to the proportion of specific micrococci made to operate on the living organism.—*Progres Medical*, May 11, 1878.

DIABETIS, WITH GREAT DEBILITY, CURED BY THE COLD DOUCHE.

Translated from the "Mouvement Medical," of April 27, 1878.

EVERY one is familiar with the gravity of diabetis. Formerly it was generally considered incurable; but this prognosis has been changed since chemico-pathological analysis admitted of distinctions in some other cases than those whose form was very well marked. It is also known, or, at any rate, believed to be only a common symptom of different diseases; though even in these circumstances the diabetic complication often discourages the very best treatment.

Patients seem to improve and then relapse, and through these alternations their health remains for years precarious and languishing, to be finally undermined by a pro-

gressive deterioration.

It is important, then, to leave nothing undone in the prevention of these fatal consequences. A diet, characterized by the exclusion of farinaceous compounds, answers undoubtedly a very important indication. In withholding the aliments easily convertible into sugar, we remove a source of products from the debilitating excretions to the advantage of the assimilable aliments; and, moreover, we check an abnormal habit by ceasing to encourage it.

But we do not think that this is all. The patient who was not diabetic yesterday becomes so to-day. What is the cause of this change? What has taken place in the economy? There is evidently a pathological change. By virtue of the axiom causa sublata tollitur effectus, in considering the effects, would it not be rational to try to remedy the conditions which produce them? It appears to us that too much is forgotten in this particular. In several patients, in the advanced stage of diabetis, the cure or marked improvement appeared to be due to visiting certain mineral springs. In this, as in many other chronic morbid conditions, would not the salutary influence of hydrotherapeutics be of advantage? In rendering the general circulation more active, and favoring cutaneous transpiration, it restores functional equilibrium and brings about a return of vigor by a greater activity of digestion. Assimilation recovering its energy, elimination would have no further reason to exist-the disease, in a word, would be vanquished.

For our part, we have had occasion more than once to observe the good effects of this treatment, and the case we are about to give is a new and striking example of its favorable influence. The patient was sent to us on December 12, 1874, by M. Siredey, physician at "Lariboissiere," who had in vain prescribed different remedies for him. Seeing that his condition grew worse from day to day, he advised him to come to us and submit to the

water treatment.

He was a man of sixty-seven years, tall, and of robust constitution; but the disease had little by little undermined his health and strength. His skin had become wrinkled, pale, and flaccid; his visage was blanched and distorted; his appetite was slight and capricious; his limbs were powerless, compelling him to keep his bed or chair; while unpleasant dreams or nightmare disturbed his sleep. He complained of heaviness and pain in the head, weight in the lumbar region, and incessant suffocation. His stools were rare, and his urine abundant. Altogether the case pointed to speedy dissolution.

We made immediately a general ablution with water at 20° cen. This being very well borne, we finished with a douche and interrupted jet over the whole body, lasting half a minute, and with water at 12° cen. From this time to the fifth of November we continued the same

treatment daily, but at a temperature of 7° and above, morning and evening; the shower and jet lasting twenty seconds, and directed particularly to the inferior extremi-

ties, finishing with the feet.

On the twenty-fourth of November there was a sensible improvement. On the twenty-fifth a douche was thrown around the kidneys for half a minute. On the second of December he recovered his appetite and could sleep. He was now able to walk moderately without being fatigued; he was hopeful and in good spirits, and felt himself rejuvenated, as he expressed it. At the end of two months he was quite restored, and left us with a promise to return the next year to be treated for a month, to prevent the return of the disease. He returned, according to promise, though it was unnecessary.

Mark well the effects of hydrotherapeutics in this disease. What other means could have acted more promptly or successfully?—E. Duval, Physician-in-Chief of the Hydrotherapeutic Establishment of the Arc-de-Triomphe.

SELECTIONS.

Genesis VI.

BY HIRAM CHRISTOPHER, M. D., of St Louis.

THE scientists who believe that living beings and psychical phenomena owe their primary existence to the operation of-physical forces through a process of evolution, do not seem to stagger at such a preposterous and absurd They seem equal to any demand of their conclusion. This is courageous if not rational. On their hypothesis all psychical phenomena are but the outcome of a force that was as really present in the fires of the sun as were the purely physical forces. In the absence of all possible proof this must be regarded as an assumption; for what is not, or can not be, proved, is unquestionably the purest assumption. There is nothing absurd in the statement that physical forces were present and active in the fires of the sun, for they are never found isolated from matter. Their existence under such circumstances can be demonstrated. But who can show by any process or experiment that the psychical agent is even present in the fires of the sun; either now or was at any previous time? It can be proved that physical forces are now active in the fires of the sun; but can it be shown that the psychical or life-agent is there; either alone or in connection with any other? The fires of the sun are still so intensely hot as to keep metals in a state of vapor in the gaseous ocean that envelopes that intensely heated luminary. All are not yet condensed to the solid state. The spectroscope has told us that many metals are yet vapor in its heated atmosphere; but it has given no indication as to the presence there of the life-agent; and it has long been known that the electrical force often sweeps in storms over that vapory ocean. By no process of investigation or mode of experiment can men prove the presence of this agent there, isolated or in connection with any other. If it was ever there, was it capable of being detected? If its presence can not be demonstrated now, is it not the purest assumption to say that it ever was there? The scientist has not yet detected mind in that fiery mist, and no fear need be entertained that he ever will. And why not? Has it all been expressed during the process of refrigeration, or absorbed by the psychical beings of this or other worlds? If mind in its germ-force was ever in the fires of the sun, either actually or potentially, it is there yet; and if its presence were ever demonstrable, it is still demonstrable; and until its presence is proved, we are justified in rejecting the material origin of living beings as unadulterated assumption, and the conclusion based on it, as too nebulous to be entitled to be considered even an inference. It is hardly necessary to say that assumptions and inferences, though made by scientific men, are not scientific truths. In these respects the theory of evolution stands without a rival in absurdity though originated and advocated by men of unquestionable scientific attainments. This is a wonderful psychical phenomenon. Physical forces never err so much as to be guilty of an absurdity The absurdity of the theory is a proof of the non-physical origin of living beings, and demonstrative of the fact that the work and operation of the life-agent are categorically different from those of

In the preceding number we reached the conclusion, logically, legitimately, that the religious sense of mankind suggests an object of worship for man in every respect his

superior, and worthy of his worship. Connected with the sentiment of worship is the idea of reward and punishment in another world, and the consequent belief in the resurrection of man from the dead, as an essential preliminary to the bestowment of rewards and the infliction of punishments. If all our art and poetry, and science and philosophy are the outcome of the evolutionary forces regnant in the cosmic vapor or fires of the sun, then we must add to these the belief in a future life, and of bliss and misery in that state of existence. We find such a belief among mankind; and any hypothesis that attempts to account philosophically for the psychical phenomena of animals, and the same in man must embrace the beliefs of mankind, and account for them on satisfactory principles. If the material hypothesis can do this, that hypothesis is true. If it can not do this, it is not true. So absurd a claim that it can do this, will not be preferred by any one, when these beliefs refer to another state of existence, and imply the existence in a man of a being that is both extra and super-natural.

As respects the anticipation of another life, and of rewards and punishments in that world of renewed being, we have facts as the ground of our conclusions. The expectation, and, indeed, the unwavering conviction on the part of the most intelligent of the race and in the most enlightened periods of human history, that man will live after the death of his body, assure us that there is, and of necessity must be, in him a being that can and will live after its separation from the body by death. Now, how can the scientist account for the presence in man of this distinct being, or, denying it, as he must and does, how account for the conviction of its being a fact? If he shall say that the conviction is a delusion, or at best but an inference, such an assertion does not dispose of the difficulty. We would suggest that such an assertion would come with a very bad grace from one who believes that mind is the product of physical forces. Under what greater delusion can the mind rest than this, or what more

Without pressing further the necessity under which the scientist lies of accounting for the presence in man of a spirit-being which will survive the death of his organism, I purpose now to make this fact the starting point for looking further, and the occasion of inquiring whether or

groundless inference can a rational man draw?

not the presence of this being in man was not the objective point contemplated at the beginning, and the end aimed at by the differentiations of the organic kingdom that mark the progress of living organisms on the earth? That man closes the series of organized beings on the earth, there can be no question, unless some new plan of structure shall be introduced. But as no new plan has been developed up to man, we may be safe in affirming that none other will yet be. The present plan does all that can be done with organized beings as respects their relations to the inorganic world and to one another. These relations are perfect; the organism of man meets the inorganic world at all possible points of connection, and in all possible ways. It is, therefore, evident that no other plan of structure or higher development of that plan can take place. More than this can not be done. Therefore man's organism being the highest in esse as well the highest in posse, he must close the long series that we find stretching along the pathway of life on the globe from the pæleozoic to the present. This being so, his is the proper organism with which to connect the present sphere with that beyond the grave, by placing in him a spirit-being who holds with this life only a temporary connection. This fact, or hypothesis, if this scientist will, throws a flood of light on all the past history of the world, and on all the phenomena of the present, and develops to the view a purpose that had its initial point in the creation of matter, and its end in the world to come.

The scientist can not reject the doctrine of teleology as taught by the facts of phenomena of the organic world. He speaks of design and purpose as manifested by the structure of animals, and its adaptation to the wants of the animal, and the conditions in which it is found existing. In the pectoral fin of the fish, he tells us, he sees the wing of the bird, the foreleg of the quadruped, and the arm of man, modification of structure arising from, and depending on, the purpose to which it is applied, and the conditions in which it was designed to live, the ultimate object being to place the animal in perfect connection with the world in which it lives. This perfection, as I have said, is found in the organism of man, and hence he is found to close the series. And as he is found to be the connecting link between the present life, and that which shall appear beyond the close of this, there is also found in

him what is not found in any species below him. We have, then, a teleology that looked from the beginning to the coming of man, and then from him to the development of a purpose with man which looks to the religious wants of his being, and explains all that went before him from the first appearance of life on the earth to the close of man's existence in the world.

The scientist may object that such reasoning trenches too much on the religious to be scientific, or to pertain to matters purely scientific, with which he only claims to deal. This objection is presented only when the argument is pressed in the wrong direction. To erect an hypothesis on fiction, and to reason as madmen, is all right and proper, and perfectly germain to science, when the object is to overturn or discredit revealed religion. Virchow has lately said, when speaking of the theory of evolution, and of the propriety of its being taught in the schools. "How could it be conceivable that a doctrine, of such moment, which lays hold of every one's mind as a complete revolutionary force, which is nothing short of forming a new religion, should not be imparted in its completeness into the scheme of our schools?" It is right in scientific men to teach an hypothesis which is virtually a new religion in the estimation of men who understand the premise and logic of the theory; but it is unscientific to even look in the direction of the only rational religion that man can have. Any view that interposes a creator, or that regards the world and its organized beings as a creation, is, in the estimation of modern scientists, the introduction of religion into the domain of science. But Virchow thinks that the doctrine of evolution is a new religion; and that this theory is regarded as pre-eminently scientific, what is its introduction but the introduction of religion? I would, therefore, appear that the real objection lies against the kind of religion, and not against the thing itself.

The hypothesis of creation and the doctrine of teleology, as well as the true views of the development of organized beings on the earth, place the end of all this development in the structure of man, in whom the systems of this world hinge on the system that develops the real and true purpose of the creation of man and of the world of which he forms a part. For the wide difference that exists between man and the highest animal below him; for the broad and deep chasm which his organism has made

between him and the highest preceding him; and for such an abrupt termination of the plan and development of structure, the scientist can offer no rational explanation. His theory of evolution has a break here which can not be mended, and a termination which was not, and could not have been, anticipated. The true reason lies outside of the domain of physical science, but the reason is none the less real and substantial on that account. The fact is the evidence of a design that had its origin prior to the existence of even matter itself; for a logical connection can be traced between the existence of matter and the appearance of man—the initial and terminal points of all mundane creations. The proof is not wanting to show that man was the grand and primary conception which made the existence of the material and organic systems of this world, if not all worlds,* a physical and logical necessity. It can be, and has been shown that he is the grand ideal of the whole system of organized beings, to which all the differentiations of the system pointed as their end and purpose; and that his organism completes the system, and ends all further differentiations of structure; so that beyond him there is no possible advance or improvement on his organism. This ideal was present in the beginning, and all through the geological periods of the world's history. When it appeared, the series closed. Hence, purpose and design mark all differentiations of structure. Every advance points to another in the future, and this upward progression continues until the ideal is realized. He is the sun of the living world, whose light illumines all the past, and makes evident the design of all that preceded him.

The methods by which this end is attained are equally proof of design, and so strange and wonderful as to mark the appearance of living beings on the earth as wholly a supernatural event. The growth and reproduction of living beings are phenomena so familiar that they excite no wonder in the mind of any but the most thoughtful. Yet there are no more mysterious phenomena in the world; and were an intelligent being, who knew only of the phemonena of the inorganic world, to look on these for the first time, they would be to him the greatest of

^{*} See Whewell's Plurality of Worlds. †Essay on Classification, pages 34, 166-7.

wonders. No substance of the material world was ever known to absorb another and convert it to a part of its own structure, itself remaining unchanged. If iron absorbs oxygen, the oxygen does not become iron, nor the iron it. A true tertium quid is formed wholly unlike Nor does the iron, like an organism, absorb more than it can unite with its particles. Nor do we find the iron or its oxide reproducing its like. Growth and repro-

duction, therefore, differentiate the organic world.

With the growth of the individual is connected the differentiations of the species. From the microscopic cell, the initial point of the individual, to the perfection of growth, structural differentiations appear with a uniformity and certainty that can find no explanation in the operation of laws purely physical. Under all physical conditions, and during all the ages of the earth, species have always proved to be immutable. No internal or external force or cause has ever transformed one into another. And not only this, but no branch or class, or order or family, or germs has ever been confounded or changed to an-As these appeared in the beginning they appear now, no more in number and no less, and of no different type, only as respects species, and in these we observe the differentiations of the system of organized beings. In this differentiation we observe the development of the system that had man in view; so that all the different species of past geological ages were but so many steps toward the realization of the conception of man, which gave origin to the whole series that mark the numerous creations of the geological ages, the outlines of that system which is repeated in the animals that now live on the earth, and whose existence is connected with the appearance and wants of man. That is to say, looking at all the various types as they successively appeared on the earth as constituting the system of organized beings, we find a parallelism existing between these and the embryonic development of the living species. On this subject Agassiz says, "That the leading thought which runs through the succession of all organized beings in past ages, is manifested again in new combinations in the phases of development of the living representatives of these different types."* How did this happen? Is this the work of blind

^{*}Essay on Classification, page 175.

forces? Is it not rather unquestionable evidence of the presence and action of a creator, who, in all these differentiations, of the entire system of organized beings, is working toward the ideal in his mind, to which all these various types of structure are but the phases of the development of that ideal?

But these parallelisms are not all that exhibit the wonders and deep design, so clearly apparent in the phenomena of the system of organized beings, as this is developed by the species that characterize the various periods of the earth's long and wonderful history. There is a parallelism between the structural gradation of animals and the phases of their embryonic growth, and between these and their geographical distribution. Such is the statement of Agassiz, sustained by an array of facts that is both surprising and convincing. Now, how is it possible to believe that all these relations, which animals are found to sustain toward one another, and to the physical conditions by which they are environed, were the result of accident, and not rather the determination of intelligence? To do so, would be to discard all such things as design, purpose, and intelligence. But this can not be done. We know that men have designs and purposes, and work for their accomplishment. They have conceptions and ideals, and form plans, and all mankind, of sufficient intelligence to distinguish right from wrong, recognize these as proofs of intelligence, and grade the intelligence by the grade or character of the design. The world is persuaded, modern scientists included, that intelligence is the author of all design and purpose—that teleology is an unquestionable proof of intelligence; and no amount of sophistry can overturn the universal conviction. If we see design and purpose in the phenomena of the world, these are the proofs that intelligence, and not blind physical forces, is the cause of such phenomena. Was the succession of animals as respects phases of development, during geologic ages; was the gradation of structure that characterizes the series, but the result of physical forces, or the determination of intelligence? How was it possible for physical forces to have so gauged their work as to have presented the successive phases of development, or to have determined the time when new species should make their presence on the earth? We know that air-breathing animals did not make their appearance until the atmosphere had

been so freed from carbonic acid by the action of plants, so as to allow ærial respiration. Did such a physical condition determine their appearance? Physical conditions of a certain kind were indeed necessary forerunners of certain species, but could they have been the sole originating cause of their existence? To suppose that physical agents could have been the authors of all the phenomena presented by the organic world from its inception to its

close, is to take a final leave of reason.

The origination of the animal world in various geographical centers; of the same species in widely separated centers of creation, when viewed in the light of the facts that man closes the series, and presents but one species of one genus, is a very remarkable fact, if such a distribution has in it no evidence of design or purpose. Do we not see in this fact the design to supply man with the animals necessary for his uses, so far as they contribute to his wants? Or do we see only this fact that like causes produce like effects?—that the same species are represented in different parts of the earth because like physical conditions obtain in these various centers? If the latter, as the evolutionist believes and holds, then why did not the human species appear in various centers? Why was their origin placed in the western part of Asia? Why did not pairs appear in Africa, Europe, and North and South America? Are 'we to understand that only one portion of the earth was capable of giving origin to the species, because of its peculiar physical conditions? If that was the case, how has it happened that he can be born and reared in every portion of the earth? The geographical distribution of animals, and the origination of mankind from one pair and in one center, are proofs that he is, in some way, the end and reason of the many diversified facts which the history of the organic world presents. This being so, we have in his animal organism an abrupt termination of the progressive development of the system of organized beings, and the end and purpose of the creation of this system; and in the spirit being which dwells during life in this organism, the beginning of other designs, foreshadowed by the existence of this spirit being, and the psychical phenomena which he presents, which no human philosophy can possibly explain. Hence, as it is now unquestionable that man constitutes the link that connects the systems of this world with designs and purposes that

concern him after death, he, as well as the entire system of the universe, must have had his origin in the mind of a being of infinite intelligence, and owe his existence to a power omnipotent; to a being capable of devising and executing a system that surpasses man's utmost powers to understand, and whose phenomena hold his mind with constant and increasing admiration of the wisdom and intelligence that displays, in the midst of infinite diversity, the consistency and unity of system.—St. Louis Med. and Surg. Journal.

New Instruments.

Dr. J. Q. Adams, of Carmel, New York, finding the ordinary hypodermic syringe unfit for the purpose of injecting hemorrhoidal tumors, by reason of its shortness and the small caliber of the needle, has devised an instrument, which he calls the *Hemorrhoidal Syringe*, for use in such cases.

He says, of the instrument and his treatment of hemorrhoids: "The capacity of this syringe is ten minims. The cylinder is one and a half inch in length; cylinder and piston, when closed, two inches; a small canula attached to the cylinder two inches, and to this a needle two inches long, making the whole length of the instru-The caliber of the needle is twice that ment six inches. of the hypodermic syringe. With this I can readily reach any internal hemorrhoid likely to occur, since these tumors are formed almost always by the dilation of loops of veins rather than in the straight longitudinal veins, and hence are seldom situated more than one or two inches from the anus. The injection of carbolic acid is appropriate whenever the ligature is appropriate; for obliterating the dilated vessel before stasis occurs; before a clot is formed. After complete stasis and formation of a firm clot, the lancet is the most ready means of relief. I believe in most instances the injections are equally as effective as the ligature, and possess advantages over it. First, by causing very much less pain, and, secondly, by being much more easily applied, especially above the sphincter. Then there are ten who will submit to the injection to one who will submit to ligation; at least I think it is so in my practice. Then again the bowels need not be shut up

as after ligation. The patient can go about attending to light work; the morning after the operation take a saline laxative and have a passage from the bowels without the slightest pain or hemorrhage, provided you have selected the right tumor for operation.

"In regard to the quantity of the mixture (carbolic acid, 3iii., olive oil, 3i.) to be injected into a tumor, it should never exceed five minims at one time. By the use of eight minims I have in two instances seen suppuration

follow.

"I now use from two to five minims, according to size of tumor; never inject a tumor a second time until the inflammation has completely subsided, say ten days or two weeks, then, if shrinkage has not taken place, inject a second time. But during this period of waiting we are not to be idle. We must ply our patients with the daily use of saline cathartics. When we encounter a case of hemorrhoids we usually find constipation accompaning it, and we are very apt to regard the constipation as the cause of the hemorrhoids. It may be a remote cause, but I believe it is very seldom the primary cause. It is more correct, I think, to regard the hemorrhoids and the constipation as the result of a common cause, viz: sluggish portal circulation. Hence the manifest relief so often obtained in this malady by this class of cathartics.

"Too much importance can not be attached to the use of dilute saline cathartics in the treatment of hemorrhoids. The Congress water is my favorite; a pint or a quart every morning before breakfast, as the case may require. In case the patient can not afford the Congress water I give some of the artificial mineral waters, or the sulphate of magnesia instead. Some one of these should be con-

tinued two or three months."

Hollow Conical Sounds.—Dr. J. L. Hicks, of Flushing, New York, has had constructed a set of four hollow conical sounds of steel with an internal caliber of about one-sixteenth of an inch, to be used with a long whalebone guide. The base of the cone is at the junction of the curve with the shaft. The size of the smallest sound is No. 7 (French scale), at the point, and No. 10 at the shaft; the largest, No. 10 at the point, and No 18 at the shaft; the others intermediate. The curve is Van Buren's

He says:—"I have demonstrated practically the utility of these sounds in a considerable number of cases of strict-

ure, and have realized their advantages, both for prompt relief of retention and for dilatation, and I believe them to be as safe as any metallic sounds can be. The guide, running through the entire length of the shaft of the instrument is not likely to become jammed or broken, and the point can hardly go astray and do damage even in unskillful hands. When the bladder has been reached and the guide withdrawn, the instrument serves as a catheter."

A RECTAL SPECULUM, AND A FEMALE URETHRAL SPECULUM.— At the recent meeting of the Cumberland County Medical Society, at Portland, Me., Dr. Geo. F. French exhibited a modification of Dowell's vaginal speculum adapted to

use in the rectum.

The instrument is made of steel wire, of sufficient flexibilily to allow the sides to approximate at their ends, when introduced, and with rigidity enough to retain its There is a slight constriction near the handle, for the sphincter ani to grasp, and a lateral flaring of the blades which effectually prevents the instrument from slipping out of the rectum, even after the sphincter has been ruptured. This speculum is equally well adapted for use in the vagina and has the advantage over other vaginal wire-specula of being self-retaining. The handle can be so deflected as to bring the upper, lower, or either side of the rectum into view for mere inspection or operative procedure. The smallest size is an efficient endo scope; can be introduced without discomfort to the patient, and is suitable for ordinary office use; the largest size requires anæsthesia, involves rupture or extreme dilatation of the sphincter, and has been found particularly serviceable in quilting a hemorrhoidal surface too rotten to be dragged outside and ligated.

Dr. French has also devised another speculum, on the same principle, for exploring the *female urethra*, and by simply straightening the handle it becomes equally serviceable as an endoscope for the dilated *Cervix Uteri*; in both cases its utility will be enhanced by the aid of a

concave mirror.

A PRACTICAL PNEUMATOMETER.—Dr. Edgar Holden, of Newark, New Jersey, published, about a year ago, a list of one hundred cases observed with a new form of pneumatometer, since which he has had so many inquiries about it that he proceeds to describe it, as follows:

"Properly it is a pneumasyren. It is of moderate cost,

and portable, with the advantage that it may be prescribed for patients, in whom the vital chest capacity is deficient.

"Briefly, it consists of a glass tube, one inch in diameter and ten inches in length, with metallic end-pieces, a piston made of two disks perforated by two rows of fine sloping holes precisely like the syren of Dove, a spiral spring, and finally an index and register. Expiratory and inspiratory efficiency, both actual and relative, are recorded, and the waviness and inequality of either are made evident to the ear.

"Better and of greater advantage, however, than this is the fact that the instrument will, by constant or rather frequent use, develop chest capacity, re-dilate the cells collapsed and weakened by incipient disease, and by its allowing a free passage of air will do this without danger to the affected tissues—differing in this last particular from the ordinary pneumatometer, which, however perfect as an instrument for scientific observation, could

hardly with safety be universally prescribed.

"Forced expiration produces a low musical note gradually growing more and more high and intense, but sensitive to the least changes in the power exerted, while the index is steadily pressed toward the further end, and remains in place after the effort is exhausted. The latter has now to be pushed back with a wire replacer designed for the purpose, and by reversing the instrument full and forcible inspiration may be employed with similar results. The tube being graduated, the relation as well as the power of the inspiratory and expiratory efforts may be at once ascertained."—Maryland Medical Journal.

Medical and Surgical History of the Rebellion.

[The following are the remarks of the Hon. J. D. Cox, in Congress, in regard to this most valuable work. Not only every intelligent physician, but every scientific man who takes an interest in the welfare of his race, will give them a cordial assent, and would severely blame Congress if the money necessary for the publication be withheld.— Ed. Medical News.]

"I wish to say a few words with regard to the Medical and Surgical History of the War, and I take as a text this statement: That of all the scientific work which the Government of the United States is doing, and rightly doing, and to which it is applying without stint, as it ought, hundreds of thousands of dollars, I believe absolute truth and verity would show that none of it is more vitally important to the people of this whole country than the very work now being done upon this Medical and Surgical History of the War. This work is not at all a mere matter of interesting science. It is applying the vast stores of knowledge which were accumulated during the war to the preservation of life and health of the people of every part of this country as well as to the improvement of the health of our Army. It has attracted the attention of scientific men all over the world, and has elicited from the first authorities expressions of admiration which are strong and unqualified.

"I hold in my hand the translation of a part of an address made by Professor Virchow, of Germany, the editor of the leading medical and surgical review of that country, and who may properly be declared to be, if not the very first, one of the first scientific authorities on this subject. I send this extract to the Clerk to be read, and as it contains various references complimentary to this country and to its scientific medical men, I hope the time which it may occupy will not be grudged by the House."

The Clerk read as follows:

"Speaking of the increased rank and power assigned of late years in

European armies to the medical staff, he says:

"Such great changes, and many other examples that might be brought forward, are the necessary results of the progress of science. It can truly be said that it has been bitter need, the sternest of all teachers, that by the severest punishments has opened the eyes of men and compelled them to see what they really did not wish to see. Yea, indeed, it is horrible to think what a school of suffering armies have had to pass through before the truth was generally acknowledged. In the Crimean war the French army lost one man in every three of its entire force, and it is estimated that of the 96,615 men who lost their lives only 10,240 fell before the enemy. About the same number of wounded died in the hospitals. The rest, more than seventy-five thousand men, fell a sacrifice to pestilence. In the American war of secession ninety-seven thousand men were killed in battle and one hundred and eighty-four thousand died of pestilence and disease. What immeasurable sorrow and suffering, what a sea or blood and tears lie locked up in these figures! But also how many defective regulations, prejudices, and misunderstandings! It is not necessary to sum up the long list of these errors and crimes; fortunately they are sufficiently well known to serve as a terrible warning to others.

"But here it must be stated that it was not the need alone which disclosed the evil and brought help. That the French learned little or nothing in the Crimea and the North Americans in their civil war so much that from that time a new era of military medicine begins, this did not result from the greatness of the needs from which the Americans suffered, for these were not more considerable than the French experienced in the Crimea. It was rather the critical, truly scientific spirit, the common sense, the sound, practical intelligence which in America gradually permeated all circles of army administration, and, with the wonderful assistance of an entire people, reached the highest degree of human effort ever yet attained in a great war. Wnoever takes up and examines the comprehensive publication of the American military medical staff will be constantly astonished at the wealth of the experiences recorded in them. The extremest accuracy in detail, statistics careful in the minutest particulars, a learned presentation of the subject, embracing all sides of medical experience, are here united to preserve in the most complete manner possible and make known to the present age and posterity the knowledge purchased at so dear a price.

"The German army had during the last French war, out of a strength of 913,967, men, a total loss of 44,980. Of these, 17,572 fell before the enemy, 10,710 died later of their wounds, 12,253 fell a sacrifice to disease and pestilence; certainly a very favorable proportion. But we had before us the experience of two recent wars which had been well discussed and taken advantage of, both scientifically and administratively. We possessed the inestimable experience of the Americans, and, finally, we had German

science."

Mr. Cox then continued:

"The high compliments which in the extract just read are paid to the medical staff of our regular and volunteer Army, and to the value of what has already been done in our Medical and Surgical History of the War, are from the stand-point of general philanthropy looking to the benefits received by the whole human race as well as to the assistance received in the sanitary administration of armies from the volumes of this great work already published. The portion of the work which is now going on is even more decidedly in that direction than anything we have done heretofore. The present labors of the medical staff have reference particularly to those diseases of the camp which are intimately connected with the current health of the people everywhere; diseases of the alimentary system, dysenteries, and the large class of similar diseases. The experience of the camp and of our hospitals during the war furnished an unprecedented amount of most valuable data and material for observation which has been preserved in the admirable manner testified to by Dr. Virchow, and the gentlemen in charge of the history are now working out the lesson of this vast experience in a manner promising results of the last degree of importance.

"I venture the assertion, from a rather careful examination from the matter and from testimony that has come to me from widely varied sources, that what I said in the

beginning is absolutely true—there is no estimating the value of this work. Hence what I desire to urge upon the House is that we shall not cut down the little force now engaged in this duty. The persons thus engaged are trained and skilled; some of them are medical men, who are acting as clercks because of the partial assistance they thus obtain in professional knowledge. This is not mere clerical labor; it is skilled, scientific work, done for clerk's wages, but done with an earnest love of the labor that money can not buy. I simply urge that we shall do what my colleague from Ohio [Mr. Finley] has suggested—strike out this proviso which transfers this little force to other work. There are only eight or ten clerks engaged upon this duty. Let the work go on. The country wants it and the whole world wants it."

Certain Points in the Pathology of the Bones, Especially Tubercle.

Dr. H. W. Smith, of Philadelphia, at the meeting of the American Medical Association, held in Buffalo last month, made an address upon the above subject. He said:

Recently a new function had been assigned to the skeleton, and the bones had been regarded by many as a focus for the origin of red and white blood-corpuscles, and through which diseased matter was introduced into the general circulation. Certain results which followed operations on the bones—such as erysipelas, septicæmia—were doubtless due to impairment of the blood-foaming functions of the myeloid cells in the medullary portion.

It was suggested that the cases of bone and joint disease, which had been reported as due to exanthematous fevers (Gibney), were perhaps cases in which the first departure from health was in the medulla of the bones, and that the exanthemata were symptoms, and not causes.

Passing to the consideration of

TUBERCLE IN BONE,

Dr. Smith gave a resume of the opinions which had been given by Virchow, Rindfleisch, Wilson Fox, Rodenstein, of Yonkers, New York., and others, regarding the character of tubercle, and from those opinions reached the conclusion that tubercle was formed from the blood through the cation of the lymphatic vessels.

The conclusion reached by Dr. Smith was—

1. That tubercle was closely connected with the lymphatics, and that it was deposited in the lymphatic vessels in Pott's disease, also in the epiphyses of the long bones as well as in the spongy bones of the ankle-joint.

2. That its developement and progress in these localities

was the same as when deposited in other tissues.

3. That tubercle affected the vessels and cancellated structure of the bones, and not the ligaments and cartilage.

4. That the destruction of cartilages and ligaments was

the effect and not the cause of impaired nutrition.

5. That softening tubercle produced congestion and in-

flammation of the bone-cells about the deposit.

6. That perverted myeloid cell action was consequent upon such change, and reacted in the way of modifying the formation of blood-corpuscles.

7. That what was termed scrofulous disease of the bones

was essentially a disturbance of the myeloid cells.

The practical lesson to be derived from such facts was that we should still hold to the teachings of our forefathers, and let constitutional treatment form an important and leading part of the management of the case, and that

MECHANICAL APPLIANCES SHOULD BE SECONDARY.

With reference to Pott's disease. Dr. Smith took the open position that external violence had nothing whatever to do with it, but that destruction of the cancellated structure of the vertebræ was the result of caseous deposit and evacuation of softened tubercle.

He also believed that hip disease was due to the same cause, and that the cancellated structure was first affected. The treatment of Pott's disease by suspension was at least two hundred years old, and the splint which kept the diseased surface in hip disease apart was an admirable instrument; but no matter what the mechanical apparatus might be, it should not supplant a proper tonic and alterative plan of treatment.

The treatment of phthisis by injecting the cavities in the lungs had met with some success in the hands of Dr. Pepper, of Philadelphia, and it might yet be a plan of treatment for bone disease to inject the cancellated structure with substances such as phosphoric and lactic acids, etc., which favored the evacuation of the caseous material.

The address was referred to the Section on Surgery.

Albuminuria in Health.

THE presence of albumen in the urine, even in very minute quantities, is usually taken as conclusive evidence of such a condition of systematic derangement as deserves to be regarded as disease. Professor Leube, of Erlangen. considering the fact that a trace of albumen is occasionally present in the urine of patients who present no other evidence of renal disease, examined the urine of a large number of men presumably in good health, soldiers on regular duty, in order to ascertain whether albumen could ever be detected in the urine of those who presented no other morbid symptoms. He examined the morning urine of 119 soldiers, and found a trace of albumen in that of five, in one a distinct quantity, in others merely a faint, just recognizable, trace. In each case the midday urine also contained albumen, and in three the amount was larger than in the morning urine. So far the results are not surprising, since they would seem explicable on the theory that these soldiers were suffering from incipient renal disease, which, as is well known, may be unattended by any indication of deranged health. But it was found that albumen was present in 14 soldiers out of 119, whose morning urine had been free from albumen. In all these instances the soldiers had undertaken arduous duty, marches or battalion drill, during the forenoon, but no food or drink had been taken during the exercise. No casts or blood were found in the deposit from the urine. The albumen soon disappeard with rest. This fact seems to show that in apparently healthy men exertion may induce slight albuminuria. This opinion was supported by an instance in which the urine of a soldier was for two days free from even a trace of albumen, but on the third, after a long battalion exercise, it contained a distinct trace, which had disappeared in two or three hours, and was also absent the next morning. In every case in which albumen was present any indication of disease, local or general, was carefully searched for but none could be found. The conclusion Leube draws from his

observations is that "in the vast majority of cases the urine of healthy persons is quite free from albumen; in rare cases, a slight, but distinct, albuminuria coexists in a completely normal state of system, and is comparatively frequent if bodily exertion precedes the secretion of the urine."

What is the origin of this temporary albuminuria? Our knowledge of the condition of urinary secretion is still too indefinite to permit a satisfactory answer to be given to this question; but it may be explained on either of the current theories of urinary secretion—that of simple filtration of all the urinary constituents through the Malpighian capsules, and that of the specific secretion of the urine by the cells of the tubules. On the filtration theory, the absence of albumen from normal urine is accounted for by supposing that either the walls of the blood-vessels permit the passage of water through them, but retain the colloidal substances, as albumen; or else that albumen passes through the membranes of the Malpighian capsules, and is removed again by the epithelium of the tu-On the theory that the transpirability of membranes depends on the size of their "pores," Leube fancies that in some individuals these pores may be of such a size as to permit the passage of some colloidal albumen as well as of water: either constantly, under normal pressure; or occasionally, when the abnormal pressure is increased by exertion. On the theory that albumen is pressed out of the blood in the Malpighian capsules, and is removed subsequently by the action of the epithelium of the tubules, the exhaustion of this function of the epithelium, or its inadequacy affords an equally facile explanation of the observations in question. - Lancet, April 6, 1878.

Sexual Hygiene.

DR. GEO. M. BEARD (Proceedings Medical Society of Kings County, New York, April, 1878), in an article on Hygiene of Chronic Nervous Diseases, reaches the following practical conclusions on sexual hygiene:

1. In savage, barbarous and semi-civilized lands the sexual appetite can be, and is, and always has been, indulged by both sexes, not only in the natural way, but in all sorts of unnatural ways, to enormous excess, without

traceable harm to the nervous system. To a less degree this is true of the lower orders in civilized lands—as

slaves, sailors and peasantry.

2. The brain-working and indoor-living classes of civilization find it necessary to observe the same caution in this respect as in regard to diet. They can bear only a fraction of what to the savage or slave is a matter of indifference.

3. There are individual idiosyncrasies in this regard. Some who are very feeble can bear much sexual indulgence, just as some who can not raise their heads in bed, or take any stimulants or tonics, can eat and digest large quantities of food, or bear any amount of alcohol or electricity.

4. Sexual intercourse is a tonic and sedative; and, like other tonic and sedative measures, it induces sleep, or, at least, quietness, and increases disposition and capacity

for work.

When carried to relative excess—that is, excess for the individual at the time—it may produce, primarily, nervousness and wakefulness, and secondarily, headache, neuralgia, and various symptoms of exhaustion. The appetite for sex. like the appetite for food, can't well be regulated by arithmetic; but whenever any of the symptoms follow indulgence, they suggest excess at that time. At another time, under different circumstances, the same indulgence for the same individual may do no harm.

5. The evils of over-persistent sexual excess are usually

temporary and very recoverable.

The notion that structural and incurable disease—as locomotor ataxia, progressive muscular atrophy, etc., are caused, primarily, by excess, is not sustained by his observation.

He says: "It would appear that the organs of thought, the organs of digestion and the organs of generation can bear, and were designed to bear, a vast amount of abuse without permanent injury. Were it not so, the human race would disappear from the face of the earth."

He thinks that masturbation is more likely to injure

than natural methods of sexual excitation, because:

First—It can be practiced in early years, even in child-hood.

Second—It can be practiced at any time and alone, and therefore more frequently. These two causes account for

the temporary or permanent debility that follows long continuance of the vice.

6. Excessive sexual indulgence, or abuse, acting on a strong constitution, produces local functional disease of the sexual organs—impotence in its various grades; acting on a nervous and delicate constitution, it produces

general nervous exhaustion.

The worst cases of impotence he has ever seen were in men of iron frames. The feeble, finely organized constitution can not abuse itself long enough to become impotent; excess so soon shows itself on the general system, that it is impossible to induce local disease. The same rule holds good in writer's cramp. This is a disease of the comparatively strong; the feeble and nervous can not write hard enough or long enough to get the disease—fatigue of the system warns them in time, and forces them to stop and take it easy.—St. Louis Clinical Record.

Baltimore Academy of Medicine.

At the meeting of the Academy for the month of May,

the following interesting cases were reported:

Serious Pin Injuries to the Eye.—Professor J. J. Chisolm reported the case of a little girl, two years of age, who met with a very singular accident to the right eye. Having fallen upon the chamber floor, she cried so lustily that the mother supposed her to be seriously hurt. She kept her little hand over the eye, attracting attention to this organ. After many examinations, the point of a pin was seen protruding above the mucous membrane near the caruncula. Seizing it, the pin entire was drawn out from the socket. The eye-ball had sustained no injury. Evidently, the pin had been sticking upright in the carpet. The child fell directly upon it, driving the pin, head foremost, into the socket, between the eye-ball and the nasal side of the orbit, until only its point projected.

Some time since, Professor Chisolm reported a case of even more curious pin injury. A young lady, in shaking a carpet rug, felt something strike her in the eye. A careful examination of the eye-ball revealed nothing. The patient insisting that there was some foreign substance in the eye, a further search made by her friend discovered a glistening body sticking to the upper lid. Attempts

were made to brush it off, but as it did not move, it was seized by the fingers and pulled away, when much to her surprise, the entire shaft of a pin 1½ inches long followed. Vision was blurred from the moment of the accident. When the case was examined with the ophthalmoscope, the cause of partial blindness was clearly revealed. In shaking the carpet, sufficient velocity was imparted to a pin lying upon it to cause it to strike forcibly, point foremost, the upper eye-lid, driving the pin up to its very head. The pin in its passage had impaled the 'eye-ball, traversing obliquely its antero-posterior diameter, and had transfixed the back of the eye at the yellow spot of Sæmerering.

RUPTURE OF DRUM MEMBRANE.—Professor Chisolm also reported a singular case of rupture of the drum membrane in a gentleman forty years of age. A friend coming up quietly behind him, had suddenly planted the palm of his hands on each of his ears. The sudden condensation of air in the left auditory meatus had stretched the drum head beyond its resisting power, and it had popped with a rent as does a paper bag when inflated and forcibly compressed. An examination in a strong light showed the vertical rent in the posterior half of the drum membrane.

Craniotomy versus Cæsarean Section.—Professor Erick asked information from members of the Academy relative to the advantages of craniotomy when compared with the Cæsarean section. He had found it necessary to perform craniotomy fourteen times without danger to the woman, but had never performed the operation of hysterotomy. He reasoned that when either the life of the mother or the fœtus was in serious jeopardy, the more valuable life of the mother should always be protected. Such appeared to be the sentiment of the larger number of the members present, although there were some who considered the destruction of infantile life unwarrantable, and preferred the Cæsarean section, in which both mother and offspring had an equal chance for surviving the operation.

Professor McSherry introduced the subject of vaccination, and desired to have an expression of opinion from the members in reference to the degree of inflammatory reaction found in some cases where the same lymph would form typical vesicles in other members of the same family. He thought that many of the spinous or inflam-

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matory results of vaccination were attributable to constitutional peculiarities of the individual and not to bad lymph, and that the vaccination only excited local manifestations of scrofulous or other constitutional troubles

which were lying dormant in the system.

Dr. Conrad, who had had a very large experience in small-pox, stated that either the vaccine lymph must have deteriorated in some countries, or that it did not give full protection to some nationalities. As physician to the Marine and Quarantine Hospital, he had had occasion to examine several thousand German immigrants. He thought that as they would exhibit from three to sixteen vaccination cicatrices, it may be said that they would average five good pustules, and yet he would have to treat cases of confluent small-pox in such subjects. He never remembered to have had a case of small-pox in an American or a negro, on whom one single good vaccination scar could be detected.

Dr. P. C. Williams referred to the tardiness of development of the bovine lymph, which was usually three or four days behind that of humanized lymph in the maturation of the vesicle. As to better protection from the bovine, he states that in his infancy he had been vaccinated by humanized virus, which had given him protection up to the present time, notwithstanding frequent exposure. Other members had had a similar experience.

The subject fixed for the evening discussion was "The Means of Determining the Amount of Urea," and Dr. Uhler exhibited a very simple means of securing this end. Dr. McKew had addressed the Academy upon this subject at a previous meeting, and entered largely into the discussion of the most accurate means of determining the

quantity of urea in any given specimen of urine.

Hanging.

Two remarkable examples are on record of persons who allowed themselves to be hung for the entertainment of an audience. An account of one of them is given in the Lancet of April 17, 1847. The man's real name was John Harnshaw, but he performed throughout England under the high-sounding professional title of Monsieur Gouffe. He was an athlete, and among other feats it was

customary with him to exhibit the process of hanging. In this performance he relied for security on the strength of the muscles of the neck and throat. He had a rope with a fixed knot which could not slip, and passed both ends of the loop up behind one ear. The whole act was so adroitly managed that he prevented any pressure of the rope on the wind pipe or the jugular veins, and could even sustain a weight of one hundred and fifty pounds in addition to that of his own body.

On three separate occasions Harnshaw mismanaged the rope and became unconscious, being luckily rescued each time. Dr Chowne, who writes the account, says very truly: "It can not be doubted that, as far as sensation and consciousness are concerned, Harnshaw passed through the whole ordeal of dying; and, had he been permitted to remain hanging until actually dead, he would have passed

out of existence without further consciousness."

Now, this man stated, not with particular reference to either accident, but as common to all, that "he could hardly recollect anything that happened to him in the rope;" that "he lost his senses all at once; the instant the rope got in the wrong place he felt as if he could not get his breath—as if some great weight were at his feet; could not move only to draw himself up; felt as if he wanted to loosen himself, but never thought of his hands." And he added: "You can not move your arms or legs to save yourself; you can not raise your arms; you can not think." He did not see sparks or light, but had in his

ears a rattling sound. . . .

All the evidence goes to show that death by hanging is painless, and there is positively no fact or well-founded opinion to the contrary. If this be the case, then what is the explanation of it? Simply this: That in every form of strangulation the blood-vessels of the neck are compressed as well as the air-passages. A large part of the blood is returned from the head by the external jugular veins, which are very near the surface, and in which the current can be checked by slight pressure. Most of the blood from the brain itself comes back through the external jugulars, which lie near, but a little outside of, the carotid arteries. The walls of veins are lax and yielding, so as to be easily compressed, while those of the arteries are firm and elastic, and it requires considerable force to approximate them. Pressure, then, which is sufficient to

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close the jugular veins only crowds the carotids a little farther inward, and the blood is still poured through them into the brain, whence it can not escape. When this pumping process is going on at the rate of seventy strokes a minute, it is easy to understand how the engorgement of the vessels of the brain, in a very brief time, reaches a degree which causes insensibility. To explain why this congestion causes unconsciousness would involve a technical discussion which would here be out of place. It must suffice to say that it does; so that, as the cerebral congestion in a hanged person brings on insensibility within a minute, while the physical agony of suffocation does not begin until later, it follows that the victim does not feel any of the pangs of asphyxia. He first becomes insensible, with accompanying pleasurable feelings, from cerebral congestion, and then is choked to death while unconscious. . . .

Drowning and hanging, then, are painless modes of dying, because the asphyxia which causes death is complicated by other circumstances which render the dying man so soon unconscious that the pangs of suffocation are unfelt. And the insensibility which results from hanging is so insidious and painless in its approach, that experiments on the subject are very dangerous for any one to make alone. It is probable that many persons, who are supposed to have committed suicide in this way, had really no intention of bringing about their own death. Some have been led, like the two gentlemen mentioned by Morgagni, to try the experiment out of curiosity. Others may have done it out of pique. It is not impossible, nor perhaps improbable, that high-spirited boys or girls, after a degrading punishment, should rush off, as we read of their doing, and hang themselves. The child puts a cord around his neck, and steps off from a chair, expecting to be followed, found choking, and released, by the anxious parents. If he is not followed and his absence not noticed, nothing can be easier for him than to step up on the chair again, loosen the rope, and no one will ever know of his folly. In the first case he would obtain his childish revenge for the wrong he had received, and in the second case he would lose nothing, for he is his only accomplice. But the laws of Nature are too stern. He experiences the fate of poor Scott, above related. Utterly ignorant of his danger, and intending only a prank of childish folly, he steps from his chair into eternity. Such a possibility should make us charitable, and in cases of suicide by hanging lead us to remember that, although the case may be evidently one of suicide, and the hanging plainly intentional, nevertheless the death may have been undesired and unlooked for.—Dr. R. S. Tracy, in Popular Science Monthly for July.

Burns and Scalds.

THE ALKALINE TREATMENT-ITS HISTORY.

By Geo. F. Waters, Discoverer of this Treatment.

WHILST reading a summary from Holmes' Manual of Surgery upon the treatment of burns and scalds, published in the Boston Journal of Chemistry for November, 1876, the idea occurred to me that there was something of importance known about burns and scalds, not included in that summary, which ought to be made public. These are the facts which came to my mind; In 1837 I saw a little sister, too young to talk, scalded with a solution of bicarbonate of potassa. A half pint of the solution flowed over her neck and chest. The water had just been poured from the kettle in an active state of ebullition, and before the kettle could be set down the little girl had done the work. To tear off her clothing was but the work of a moment, and the scalded surface was then covered for a short time with a cool calico apron. In two minutes she had stopped crying, and, looking into her mother's eyes, began to laugh. My mother thought it hysterical, and expected to see her soon go into convulsions. She made all haste to dress the surface with sweet oil and laudanum. with cotton batting over all; but the surface blistered before she could finish dressing it, the vesicles being quite small and near together. The next morning all signs of a burn were gone, except little white patches of desquamation where the bullæ had been. There seemed to be no soreness, and there was no after-trouble. So far as I know, there was at this time no thought of ascribing the wonderful cure to the saleratus in the water, and yet my mother might have had such an idea. A story which she told at that time, of an old horse wounded in the side and turned out to take his chance of cure without care, would

seem to imply as much. This is the story: a potash-factory was by the side of a pasture, and the horse would frequently go to the heap of leached ashes and nibble them. One of the workmen, disgusted at the sight of the gaping wound all alive with the larvæ of flies, dashed a ladle of hot lye into the wound, starting the horse and destroying the parasites; and the horse was in a few days cured of his wound and taste for leached ashes. This is really the first case of alkaline treatment—occurring as it did in my

mother's girlhood—of which I have heard.

The next case which came under my notice was in 1860. My oldest daughter, then in her fourth year, was accidentally crowded against a hot stove, by which her arm was burned from wrist to elbow, the embossing of the stove burning in deeply. Soap-suds was first applied to the arm and gave relief, and, as soon as it could be prepared, the "linimentum ex aqua calcis" was used to dress it with. The emulsion was made with olive oil. It was quite bland and soothing. (The odor is not quite so bearable as that of the carron oil, linseed oil, and lime-water.) She made no complaint, and had quite a quick recovery.

The next case was in 1865. I had opened a large threecase Roberts' vulcanizer hastily, the thermometer, when I began, indicating temperature of 320° Fahr. Violent ebullition soon cooled down the water to 212° Fahr., but the upper part of the vulcanizer was very much above that temperature. Wishing to cool down my case as soon as possible. I grasped the flange of the vulcanizer on either side with my hands—using woolen pads in so doing; but, as I started for the sink to empty out the hot water, my left hand slipped its hold and that part of the vulcanizer dropping brought my hand into the scalding steam. That the cool air might keep the steam away from it, I at once lifted the vulcanizer and at the same time tried to recover the lost hold of the left hand. I succeeded, but in doing so I got about five deciliters of water, in a violent state of ebullition, on my wrist and into my sleeve. My training in the medical laboratory had taught me to keep cool in accidents, but, though I kept my muscles under control, I could not keep my arm cool; so, whilst my assistant stood aghast, I set down the vulcanizer, took off my coat, unbuttoned my sleeve and lifted it up from the arm, which was red as a boiled lobster. Behind me, and within reach, was a case of drawers, one of which contained a good supply of bicarbonate of soda. As soon as I felt the hot water upon my arm the whole case of my sister's scald came vividly to my mind, and the thought with it that it was bicarbonate of potassa which saved her. I had no bicarbonate of potassa at hand, but I had soda bicarb, and without a second's hesitation I thrust my right hand into the cool soda and felt a relief there; withdrawing it with a handful of soda, I lightly rubbed with it the left arm and wrist wherever it burned. I then buttoned my sleeve again, although it was still wet and warm, and took up the vulcanizer and went on with my work; the whole detention was less than two minutes. When my assistant found his mouth, he said, "You'll be laid up three weeks with that." But it did not give me a moment's uneasiness thereafter.

The next case was in 1875, when I burned the inside of my left hand with a metallic die, the temperature of which was very much above boiling water. The skin was scorched and contracted. I was standing near my sink, and at once took up a cake of biborate of soda soap, dipped it in water, and applied it to my hand. It gave me relief in less than a minute, and the relief was permanent.

When I read the article in the Journal of Chemistry all of the above cases came, as I have said, to mind, and I at once thought that there must be reasons for the pain in a burn other than the proximity of the air, and that the philosophy of the cure was in some way connected with the action of the alkalies. Experiment (on my own person) showed me that of all the alkalies bicarbonate of soda was the quickest and best and lime the slowest and poorest in action, potassa being between the two. Nature places them in their appropriate places in their animal system. Thus, take a cross section of any limb, and we find the bone (lime compound) central, surrounded by muscles (potash compounds), and the skin external, with its albumen associated with soda. During the winter of 1876 I made a study of the human saliva as found in the mouths of my patients, on the microscopic stage, with polarized light. There I found the lime compounds of a solution to first appear in a crystalline zone, followed by potash and stronger (acid) soda salts, as chloride and sulphides, etc., the bicarbonate of soda being the last to put in an appearance, and the whole mass on the slide

seeming perfectly dry before a crystal of the bicarbonate of soda was seen. Thus bicarbonate of soda is shown to be in a fluid condition with a minimum amount of water, and bicarbonate and phosphate of lime to require a maximum amount. Here the microscope explains the philosophy of the position of the alkalies and alkaloids in the living body, as well as why bicarbonate of soda is the proper alkali to apply to the skin for any purpose. As we investigate we always find albumen in association with bicarbonate of soda, or soda in some form, showing them

free vet constant lovers.

In the winter of 1870 the late Dr. N. C. Keep recommended me to use for my eyes, which were suffering from overwork, the vapor of bi-sulphide of carbon. To apply it by means of an eye-wash bottle, holding the bottle by one hand so as to warm it, and thus to vaporize the bisulphide. In using it, I found that as soon as the vapor began to form there was a sharp, pricking sensation in the surface of the sclerotic coat exposed to its action, and that this surface soon began to show signs of inflammation, the small blood-vessels enlarging and carrying red blood. A natural desire to know the philosophy of its action led to a course of experiments, in which it was conclusively shown that the pricking was caused by the vapor entering the minute pores, arresting and severing the natural course of the flow of the contents thus pressing upon the adjacent nerves, and continued pressure, causing continued back-action, allowed the red blood disks to glide into the enlarged vessels. Applied to the skin, I found that it, and also chloroform and ether (sulph.), would produce all of the phenomena of a scald, even to vesication, if continued long enough.

Cold applied to the skin may produce the same phenomena. The volatile hydro-carbons produce their effects by pressure applied to the mouths of the pores, penetrating them and causing them to dilate and press upon the contiguous nerves, thus producing pain. Cold crystallizes the contents of the pores, and thus obstructing them produces its effects. Heat contracts albumen, hardens, stiffens, and thus closes the pores and produces pressure upon the nerves. The application of bicarbonate of soda gives its quick relief by dissolving or softening the albumen in or surrounding the pores, and, allowing the restrained contents to escape, relieves the pressure. That the pain

is due to pressure is shown also by the fact that position is all important in giving relief. Thus, a man came to me who had burned his hand with melted sulphur. He had scraped off the sulphur and washed with soap, and came with his hand in a wet towel, suffering intensely. By urging I got him to stand still while I placed a half dozen grains of soda bicarbonate in his open palm; a drop of water added made a stiff paste, which at once removed the pain. Holding his hand up to the light, and gazing at it with looks of astonishment, he exclaimed, "By golly, I don't see how he does that," But as he turned to leave my office, and took hold of the door-knob to open it, he suddenly turned, exclaiming, "It has all come back again." I explained to him my theory of pressure, and directed him to so poise the limb as to let the blood gravitate toward the heart. He had no more pain. Many other cases have come to me of a like nature, showing the same fact, and in the last (May) number of the Boston Journal of Chemistry they say we have met with only one unfavorable report concerning the new remedy. Dr. R. P. Oglesby states the case of his child in The Doctor. It seems that the child's hand was scalded by the steam from a kettle. The hand was treated by "placing it in a solution for nearly ten minutes." Now the position of the limb in this case was such that not only could no relief come, but even the blood-vessels would be dilated so as to make a pressure that would not quickly be relieved upon the limb being properly posed; but brought to a proper position for relief by gravitation, and having the contracting power of cold applied, it would have ceased to give pain in less than ten minutes, and I do not see why ten seconds would not have sufficed. (See the Journal, page 130.)

I had arrived at the conclusion that pressure was the cause of the pain, about the last of January, 1877. I now began a search through medical books and among friends to see if I had been working on old ground. I could find nothing that even hinted at my conclusions. It did not occur to me to ask Dr. White, although I frequently saw him at the meetings of the Boston Society of Natural Histor. In April I met Dr. William F. Channing, of Providence, and gave him, quite briefly, the results of my studies on the treatment of burns and scalds. He at once said that it was all new to him, and advised me to publish

or make known the results of my investigations, as they were of too much importance to be allowed to repose in the possession of one or of a dozen persons. So I resolved to publish as soon as an opportune moment arived, which soon came at a meeting, in Salem, of the Massachusetts Dental Society. My essay was unwritten, and was delivered in the institute building on the 8th of June, 1877. Before eight o'clock on the morning of the 9th of June, a woman in this city read the report of the essay as printed in the Boston Daily Advertiser, and in half an hour had a chance to try the cure. She was taking lemon-pies from the oven, a pie slipped from her hands, she sprang to save it, hit the edge of the plate in such a way that the pie was turned over upon her hands hot from the oven, bottom up; she turned it on the table, saved her pie, then quickly washing off the sticky stuff applied the bicarbonate of soda, which, as her good fortune ruled, was at hand on the table. It gave her immediate relief. She told a friend, who came to me with the story, that she could see the fire leave. No unpleasant results followed. Many such cases are constantly coming to my knowledge. I will close with a case of scalding with soap, which occurred in Concord, Massachusetts:

Mr. Cyrus Hapgood (then twenty years old, now sixty) was at work alone in a soap factory making hard soap, using barilla with bleached-ashes lye. A sudden increase of heat caused the soap to boil over. He had on a course cotton shirt, open in front, with a button six or eight inches down from the neck. The top of the kettle was about breast high, and when the soap came over, a quart or more flowed into his bosom. He says the pain was awful, but he could not stop; he just leaned forward for a few moments and held his shirt off till it cooled a little, and then he went on with his work saving the soap, which was now done. At night he took off his shirt and soap and washed up; there was no soreness of the skin where the soap had been, and he suffered nothing from the soapscald after it got cool. This was a year or so subsequent to my sister's scald. Mr. H. gave me the history of his

case Sunday, May 12, 1878.

My treatment is to apply to the burned surface bicarbonate of soda in fine powder, if it is a wet surface; but if it is a dry burn, use a paste of bicarbonate of soda and water, or a strong solution of the bicarbonate of soda in water and apply to the burned surface. This relieves sunburns as well as burns from hot coals, melted sulphur,

hot iron, steam, etc.

N. B.—Always dispose the burned surface so that the blood can gravitate toward the heart if possible, as otherwise a continuous pain may be felt, due to the dilation of the blood-vessels from the weight of the contained blood.

If bicarbonate of soda is not at hand, bicarbonate of potash is the next best; biborate of soda does as well, but is not often found handy. Then the emulsion of limewater with oil makes a good dressing where the skin is broken. But vaseline is preferable, as there is no odor from it, and it is quite as bland.—Louisville Medical News.

MICROSCOPY.

MORPHOLOGICAL CHANGES IN SYPHILITIC BLOOD .- Dr. Ephraim Cutter, of Boston, at the meeting of the American Medical Association last month in Buffalo, gave a microphotographic exhibition of the morphological changes which occurred in the blood in consequence of syphilis. The diagnosis of syphilis was based upon the presence in the blood of a copper-colored filiform growth, with rounded and enlarged extremities and spores. Dr. Cutter regarded the demonstration as corroborative of the claims of Dr. Salisburg in connection with the same subject. He thoroughly believed that positive diagnosis of syphilis could be made by microscopical examination. He also believed that Lostorfer was correct in his statement that the white blood corpuscles were enlarged in syphilis; but he should have insisted upon the copper color of the spores.

SECTION-CUTTING BY MEANS OF ETHER SPRAY.—In the Lancet of June 8, Dr. Chas. Coppinger, of Dublin, writes, as follows:

"In the Lancet of April 27 an article appeared, directing the attention of pathologists, etc., to a new method of section-cutting by means of ether spray. Now, this precise method of using the spray for microscopic purposes was previously mentioned in your journal (Febru-

ary 19, 1876), more than two years before, and in a paper in which ether spray was for the first time recommended to microscopists. The so-called new method was consequently the very first of those adopted for the purpose; and the apparatus, of which a wood-cut was published, was the same as that now advised by Dr. Smith. I have no doubt he was not aware of this, but a moment's comparison of the two papers will convince him of the fact. I myself now use a different, and I think better apparatus on the same principle."

San Francisco Microscopical Society.

A REGULAR meeting of the San Francisco Microscopical Society was held at the Society's rooms, on the evening of June 6; President H. C. Hyde in the chair. In the absence of Secretary Clark, Mr. Wickson acted as Secretary pro tempore. There was a good attendance of mem-

bers, and Mr. Frank Kennedy as a visitor.

Besides the usual acquisitions to the library, in the form of recent scientific periodicals, there was, by purchase, Mr. Andrew Murray's work on "Economic Entomology," which is especially valuable for its descriptions of animal parasites and acari generally. There was also received from Germany the first of a series of exceedingly valuable charts, entitled "Zoologische Wandtafeln." These are large, accurately drawn, and beautifully colored plates, suitable for mounting and hanging upon the walls of the Society's rooms. The plates thus far received include the Coral Polyp, Rhizopods, and Crustacea. These were examined with much care, and pronounced the finest large drawings of these subjects the members had ever seen. They will be carefully mounted and hung.

An addition to the library, which was received with much valuable comment, consisted of seventy-five volumes of microscopical literature, purchased from the library of Dr. A. Meads Edwards. President Hyde gave an interesting analysis of the acquisition, stating, in conclusion, that it rounded out the Society's library in several important directions, and would be of lasting value

and interest to the Society.

An interesting slide was received for inspection from Mr. Allen Y. Moore, of Tulare. It was "Abbe's Test Platte," for testing chromatic and spherical aberrations, which Mr. Moore recently received from Germany. Unfortunately, the slide was found to be badly broken when the package was opened, and, consequently, no satisfactory examination could be made of its merits. In Mr. Moore's letter, he makes the following announcement:

"I have recently resolved surirella gemma (dry) into longitudinal lines by a Gundlach's one-fifth objective (108°), with very oblique sunlight. That is almost too good to be true, isn't it? I have, however, a witness. The objective is owned by Dr. A. C. Stokes, of Trenton, New Jersey, and is very good for the price—\$15."

A good part of the meeting was devoted to conversational discussion of ways and means for increasing the Society's acquisitions in an important direction, the details of which will doubtless be made known at a future meeting.

On motion of G. L. Murdock, a vote of thanks was unanimously tendered to A. C. Dietz & Co., of this city, for their generous donation of lamps, etc., which contributed much to the success of the recent annual reception.

The Presence of Elastic Fibers in Phthisical Expectoration.

Sokolowski and Greiff say (Deutsche Med. Wochenschrift, Feb. 9, 16, and 23, 1878) that in many cases of pythisis, when the physical signs do not afford satisfactory evidence of destruction of lung-tissue, the demonstration of elastic fibers in the sputa becomes of great diagnostic and prognostic importance. The authors have made very numerous observations to determine, how far the presence of elastic fibers in the sputa corresponds to the data of physical examination, in respect to the destruction of the pulmonary tissue. With this object they have followed the cases of seventy patients; the examinations for the fibers have been made by two methods, fresh and by Fenwick's process slightly modified, the latter being generally adopted.

They mixed the whole of the sputa with a soda solution (1 of liquor sodæ to 2 of distilled water) and boiled it for four or five minutes; then diluted it with an equal quantity of distilled water, poured it into a flat porcelain ves-

sel, and fished out the particles suspended in the water, and subjected them to microscopic examination. In some cases they only found one single piece, in others many dozen; in the cases where so many were present, the physical examination also showed signs of great destruction of the lung, but in general no very great importance is to be attached to the number of the pieces. Their size varies as much as their number; in one case of gangrene of the lung the large pieces were more than a millimeter long; but in general they were only a few fractions of a millimeter. In color, the boiled fibers were yellowishbrown, or dark-brown and blackish. Generally the fibers assumed the structure of a reticulum, but very rarely as well marked as Fenwick figures it; the color is so distinct that artificial staining, as suggested by some (by fuchsin as recommended by Duval), is unnecessary. There are frequently fungus growths of sputa, which at first might be confounded with the fibers, but the greater thickness and regularity of the latter indicate their nature. (The authors here print a tabulated account of all their cases.)

Of the seventy patients who were examined, nineteen belonged to the stage of breaking down of the lungs with marked hectic: of these nineteen cases they found elastic fibers in eighteen; in two they found them only at the second or third attempt, although the physical signs of destruction were present. The single case, in which in spite of two examinations they failed to find any fibers, was a female patient, aged twenty, with great destruction of the left upper lobe and marked hectic; further investigations were made impossible by the departure of the patient. In another of the patients of this group they found fibers once only in several examinations. In one case the absence of the fibers corresponded to temporary improvement and freedom from fever; in another they found no fibers at their second examination, although no improvement, but an increase of hectic, existed. From their cases they conclude that, in cases of phthisis with demonstrable breaking down and decided hectic, fibers will be found, if not in one, at least after several examinations; but that in these cases the discovery is of no value, as the destruction of the lung-tissue is otherwise sufficiently proved.

Of eleven cases belonging to the category of chronic phthisis with unmistakable destruction of lung-tissue, but

without hectic, elastic fibers were found in all, but in one of these they were only found at the second or third examination, at a time when temporary fever and a relapse existed. Here also their discovery was of no diagnostic value. But may it be of prognostic value, as the case just referred to might indicate? In another case, in spite of general and local improvement (disappearance of the physical signs of a cavity), elastic fibers were found up to the time of his discharge, which served to show that, in spite of the apparent improvement, the destructive pro-

cesses in the lungs were still going on.

In the other forty cases there were signs only of consolidation; the condition of all was good, and without fever, with two exceptions. In the first case, after a violent attack of pulmonary hemorrhage, diffuse pneumonia with high fever supervened, which terminated in death. In the second case, a feverish condition developed from time to time, which generally accompanied hæmoptysis. Of these forty patients sixteen had great consolidation of one or both lungs; of these sixteen they found elastic fibers in twelve cases; in four cases they found none. Of these four cases two had great consolidation of the right lower lobe; in the other two the consolidation was of very old date, and probably was already contracted. Of the twelve cases in which fibers were found, in one case they were discovered first at the second, in another not until the sixth examination; in the last patient their appearance was preceded by several days' fever and dyspnæa, probably indicating a commencing destruction of the infiltrated parts. In seventy-five per cent. therefore of their cases of consolidation, they found these fibres present, which, they say, shows how frequently destruction is going on although the physical signs are those of consolidation only. In such cases, the prognosis must always be made with caution. The remaining twentyfour patients had only very slight consolidation in one or both apices; in eight cases, or one third of the whole number, the elastic fibers were found; in the other twothirds there were none. Of these eight cases some are worth recording briefly.

GLEANINGS.

INFLUENCE OF MUSCULAR CONTRACTIONS ON THE TEMPERATURE OF PERIPHERAL PORTIONS OF THE BODY.—(Le Progres Medical, March 23d, 1878.) Drs. Grasoit and Apolinario have recently made some investigations on this subject, which are published in the journal just mentioned. The temperature of the forearm was taken when the fingers were moved energetically and the hand pronated and supinated rapidly. Before the movements commenced, the temperature determined by a surface thermometer was 33.6° C. It gradually arose till, after eleven minutes of muscular exercise, it stood at 34.8°.

In a second healthy person, the thermometer being applied to the forearm, as before, stood at 34° when the individual was quiet, but after forty minutes of exercise,

stood at 35.2°.

In a third case, in which the thermometer was again placed on the forearm, it registered 33.2° when the person was quiet, and rose to 35.3° after an hour of muscular exertion.

In a fourth subject, the temperature of the forearm in repose was 32.8°. After seventeen minutes of exercise it rose to 35.4°, and then, after five minutes of repose, it fell to 33.6°.

CLINICAL STUDY OF FERROCYANIDE OF POTASSIUM.—By Drs. Regnault and G. Hayem. This paper was read before the Academie de Medicine on the 19th of March, 1878, and we take the following conclusions which the authors reach from Le Progres Medical of March 23d:

1. Ferrocyanide of potassium is entirely inactive as a ferruginous preparation, and contributes nothing to the

regeneration of the red corpuscles of the blood.

2. The organo-metallic radical is not altered in any way in the system; the iron which it contains remains inert, and the cyanogen seems to be perfectly harmless, since several grammes a day may be taken for two weeks or months without any evil result.

3. A number of experiments made by the authors seems to show that in doses of from five to six grammes the ferrocyanide of potassium exercises no appreciable influence on the flow of urine, nor on the amount of urea

excreted.

KIDNEY-ITS STRUCTURE IN SCARLATINA. -- Dr. Klein (Medical Times and Gazette, Vol. I. 487, 1877), in a paper, gives the results of a microscopical examination of the kidney, liver, spleen and lymphatic glands, from cases of scarlatina. In the kidneys he observed the following change. During the first week there was an increase of the nuclei of the malpighian bodies, hyaline degeneration of the inner coat of the minute arteries, and of certain portions of the malpighian bodies, multiplication of the nuclei of the muscular coat of the small arteries, and finally the swelling, nuclear increase, and granular condition of the epithelial lining of the tubules. After the second week there is a cellular infiltration around the tubules, and the results of a parenchymatous nephritis. The hyaline change is the same as that described by Gull and Sutton. Alterations in other organs mentioned above resembled those of the kidney.—Detroit Lancet.

RICE is of more use and of larger cultivation than any other cereal grown. It is almost the only diet of hundreds of millions of people in China, Asia, and all Eastern countries. In those countries it is used the same as potatoes, and is a substitute for them. Only at the North is rice looked upon as a luxury, to be used with milk and sugar. At the present low price of domestic rice, it is the cheapest food obtainable, not excepting potatoes. Potatoes contain about 80 per cent, of water and do not gain much in the process of cooking. Rice has no waste whatever, contains 22 per cent. of water, and in boiling gains three times its original bulk. Hence one pound of rice at 6½c. per pound makes three times as much when cooked; equal to three pounds of potatoes at 2½c, per pound or 7½c. Rice properly prepared should come upon the table dry, each grain unbroken, and served with the condiments used on potatoes; and be partaken of as a vegetable, with meats, and not as a dessert.

DIET.—Elder J. S. Prescott calls our attention to an experiment in dieting, which a person in Medina, Ohio, has practiced with increasingly beneficial effects. As an economical experiment it certainly is forcibly interesting. We condense: "For breakfast, five graham gems with butter; no inconvenience or hunger followed—cost three cents. Dinner \(\frac{1}{4} \) lb. rice, one once each of sugar and butter—a good meal—cost five cents. Supper, \(\frac{1}{4} \) lb. corn meal, \(\frac{1}{2} \) pint

milk, cost three cents. One day's cost 11 cents. For a change, one gill of beans, which, by the quart, cost less than half a cent."

The correspondent claims to have worked hard, ate nothing between meals, is renewing his age and youthfulness, and only dreads the lonesomeness to be experienced by living to a very great age.—N. Y. Shaker.

Brain-Feeding.—London Lancet: We are glad to find some small tokens that the need of "brain-feeding" is beginning to be recognized by the lay public. For example, it is at length perceived that to perform intellectual work thoroughly men must be supplied with fresh air. This scrap of wisdom has been excogitated in connection with the controversy about the ventilation of courts of justice. It is not unreasonable to anticipate that in process of time it may dawn on the consciousness of ordinary thinkers that just as muscle is fed and trained for physical exercise, so brain needs to be prepared and sustained in mind-work. It has too long been the fashion to leave the nobler part of man's organization to struggle with its own peculiar difficulties and supply its special need as chance might enable it. This policy of neglect was all very well while the strain upon brain-power and work was not relatively inordinate. So long as the brain endured no more than its share of the penalty of labor it might be left to pick up the nutriment it required from the common store supplied to the body as a whole. The faculty of self-repair in the brain was assumed to be equal to the needs of the organ, and in health it proved adequate to the task thrown upon it. Now, however, the equilibrium has been dis-The press of work and the strain of worry are so turbed. great in these days of hot haste and breathless enterprise that, except under conditions rarely established and maintained, the power of self-nourishment and repair in the mind-organ is not sufficiently strong to keep it in health. It follows that it must be fed and nourished by special design. An adequate supply of oxygen is the preliminary requirement. Then comes the question of food; and, whatever else may feed the brain, workers with this organ should be assured that alcohol will not sustain it. Alcoholization and oxygenation are directly antagonistic processes, and even if alcohol be food for the brain, the organ can not feed when the nutrient fluid circulating in its vessels is disabled in the task of conveying oxygen, which happens whenever spirit is present in more than very moderate proportions in the blood. The relief afforded by alcohol from the sense of depression produced by a lack of oxygen is therefore illusory. It is procured by over-stimulating an organ which is both exhausted and impaired.

INFANTILE MORTALITY IN HOLLAND.—In a remarkable work by Dr. Van Houten (Bijdragen tot den Strijd.) is the following: "It requires remark that the most fruitful marriages are in those provinces where the mortality of children is highest, Zeeland and South Holland, where, according to the tables, from 1860-69, 10,000 children, of the age from birth to one year, from 3,164 to 3,352 die yearly; the least fruitful are Friesland and Dreuthe, where the mortality of 10,000 living children was only 1,603 to 1,340. The fruitfulness of the marriages, which fills up the victims in their first year by new births, is thus an unfavorable phenomenon, and in no ways a proof of greater increase in population. Probably the cause lies in the non-suckling of the children by their mothers, who work out of doors. A medical journal lately gave a very distressing picture of the effect of field-work upon the part of the mothers in causing sickness and death among their infants."-London Doctor.

The Telegraphic Disease.—Onimus, in Courier Medical, calls attention to this disease, somewhat analogous to, but much more severe than, writer's cramp. Morse's instrument is blamed for causing the greatest number of cases, probably because of the extremely close attention required in using it to avoid errors. The symptoms are chiefly palpitation, over-excitement, vertigo, insomnia, sometimes weakening of sight, and a sensation of constriction at the nape of the neck. The over-excitement is succeeded by depression, sadness, and entire loss of tone. The patient loses memory; insanity even may follow. The symptoms are more readily produced in women than in men.—London Doctor.

LIFE AND DEATH.—London Lancet: The "improvement" which consists in employing disused burial-grounds as gardens for the public advantage is progressing, though not so rapidly as we could desire. A recent meeting, attended by the Hon. and Rev. W. H. Freemantle, Dr. B.

W. Richardson, Prof. Mark, Rev. Harry Jones, Dr. Hardwicke, and others, resolved to promote the conversion of the old yards in Paddington Street to this sensible service. Our warm sympathy is with those who 'are urging the adoption of these measures. The twofold advantage of getting rid of burial-grounds in populous districts, and substituting something more cheerful for the lugubrious spectacle of dilapidated tombs and headstones, and of securing special places for the use of poor children, who need space for healthful recreatin, must secure the approval and as far as possible the co-operation of all who can help in this matter, which involves no disrespect to the memory of the dead, while it bestows some thought on the happiness and health of the living.

CALOMEL IN THE TREATMENT OF WORMS.—Dr. Walker believes that calomel is the best worm remedy for children. He reports a case of profuse fluor albus in a three-year-old child, which resisted all remedies, but finally healed after the expulsion of the coil of small worms. The worms were expelled after a single dose of calomel, consisting of ten grains.

Death-List of Cincinnati, Ohio, for May---Classified.

	-	
CLASS 1.	ORDER.	TOTAL.
Zymatic	.1st—Miasmatic	48
•	2d—Enthetic	
•	3d—Dietic	-48
Constitutional	.1st—Diathetic	
Constitutional	2d—Tubercular	
Tanal		
Liocai	.1st—Nervous System	
	2d—Circulatory "	
	3d—Respiratory "	75
	4th—Digestive "	20
	5th—Urinary "	5
	6th—Generative "	
	7th—Locomotory"	
	8th-Integumentary System	-174
Develonmenta	l.1st—Children	7
201010pmonta	2d-Women	i
	2d Old Ago	3
	3d—Old Age	
TP1 1	4th-Nutrition	22-33
Violence	.1st—Accident	14
	2d—Homicide	
	3d—Suicide	5—19
	Total	341
	Still Born	31

CAUSE OF DEATH, AS REGISTERED.

Abscess of Lung 2	Jaundice I
Accident14	Kidney, Disease of 2
Angina Pectoris 1	Kidney, Bright's of 1
Apoplexy 4	Laryngitis 5
Asthma 5	Liver, Disease of 4
Ascites	Liver, Cirrhosis of 1
Bowels, Obstruction of 1	
	Lungs, Congestion of 4
Brain, Disease of 1	Lungs, Inflammation of 4
Brain, Congestion of 7	Marasmus 5
Brain, Inflammation of 3	Measles 1
Bronchitis16	Meningitis14
Cancrum Oris 1	Meningitis, C. Spinal 5
Cancer 1	Nephritis 1
Cancer of Liver 2	Old Age 3
Cancer of Stomach 2	Paralysis 4
Cancer of Uterus 2	Peritonitis 2
	Plaurier
Cholera, Sporadic1	Pleurisy 8
Consumption45	Pneumonia35
Convulsions26	Premature Birth
Croup 3	Pyæmia 2
Debility 3	Rheumatism 1
Diphtheria10	Scrofula 1
Dropsy 5	Spinal Disease 1
Dysentery 3	Suicide 5
Enteritis 3	Tabes Mesenterica 2
Erysipelas 2	Tetanus 1
Exhaustion 6	Teething
	Tumor of Proin
Fever, Intermittent 1	Tumor of Brain 1
Fever, Scarlet15	Ulcer
Fever, Typhoid 6	Ulcer of Bowels
Heart Disease 4	Ulcer of Stomach 1
Heart Disease, Valecular 5	Uræmia 1
Heart Disease, Organic 2	Uterus, Rupture of 1
Hemorrhage of Lungs 3	Varioloid 1
Hernia 1	Whooping Cough 1
Hydrocephalus 2	
Inanition 8	. 341
I I I I I I I I I I I I I I I I I I I	
AGE OF D	ECEDENTS.
Under 1 year of age95	40 to 50 years of age25
1 to 2 years "36	50 to 60 " "22
2 to 5 " "29	60 to 70 " "16
5 to 10 " "18	70 to 80 " " 8
10 to 15 " "16	80 to 90 " " 3
15 to 20 " "11	90 to 100 " " 1
20 to 30 " "30	
30 to 40 " "31	Total341
00 10 40	10001
personal	
NATIVITY OF	DECEDENTS.
Cincinnati206	England9
United States	England
Germany	Ovaci Toronga Commissioniiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
Ireland	Total341
Trotalid	T. O. C.

REGISTRATION	OF DEA	THS BY	WARDS
TITIOTOTIVATION		TIUO DI	AA TINDO.

1st V	Var	d21	11th	Ward	16	21st Ward10
2d	66	11	12th	66	6	22d " 7
3d	44	21	13th	44	17	23d " 5
4th	66	17	14th	44	15	24th " 7
5th	44	18	15th	44	8	25th "10
6th	66	12	16th	44	12	Public Institutions28
7th	44	16	17th		7	
8th	44	13	18th		18	Total341
9th	66	10	19th	44	14	
10th	46	13	20th	46	9	
		SEX.				COLOR.
Males				197	White	313
Femal	les			144		28
		Total		341	T	otal341

SOCIAL CONDITION.

Married	. 99
Single	
Widowers	
Widows	
Total	341

REMARKS.

The month of May was remarkably healthy as compared with the same month for five years past. The principal zymatic diseases, causing death, were scarlatina, diphtheria, and cerebro-spinal meningitis. There was a decrease in the number of deaths from diphtheria and scarlatina, as compared with the previous month (April), and a slight increase in the death-rate from cerebro-spinal meningitis.

EDITORIAL.

Golden Hours, for July, has the usual characteristics of this excellent juvenile. We advise our young friends to become acquainted with it, by subscribing for the next six months. A serial commences with the next number, and will be finished in December. No continued story will be carried into next year. The remaining six months of 1878 may be had for 75 cents. Hitchcock & Walden, Cincinnati, Ohio, Publishers.

CINCINNATI HOSPITAL.—We have not had anything to say in regard to the management of our City Hospital for some time, but it is not because we have despaired of bringing about the reforms that we have desired. Our silence has been the result of being much occupied with

other matters of importance.

We propose before long to exhibit defects in the management of the Cincinnati Hospital, that are permitted to continue from month to month, that ought not to exist in a first-class institution of the kind. It is daily harped upon that Cincinnati is a great medical center; if so, its chief hospital should have such a staff, such a board of trustess, and such management, as to command respect. Is such the case? We fear that after a little reflection the reply would have to be "No." The staff is not what it should be, the trustees do not exhibit the wisdom, the foresight, and comprehensiveness of the wants of an institution of the magnitude it is, and the management is far short of what it ought to be.

During the time we have been silent in regard to the Hospital, a number of communications criticising the action of the board of trustees in many particulars have accumulated upon our table. One of these is entitled the "Council of the Sages," representing in comedy (we scarcely know whether to rank it high or low) the board assembled together to make an appointment to the staff. Although we have had it on hand for some time, yet, like the plays of Shakespeare, it does not spoil by the keeping. We are of the opinion, however, that the publication of it would not improve the author's chances of an appointment upon the staff, in case he should be a candidate. But we will let our readers judge for themselves

at a future time.

As we have stated, we are not yet done laboring to reform the Hospital; but propose soon to address ourselves to it editorially, and to publish such communications as may be sent us which may contribute to that end.

Body-Snatching.

THE good people of Cincinnati, and, in truth, we may say of the whole country, have been very much excited during the last few weeks in regard to the robbing of graves by the so-called resurrectionists, or body-snatchers. The body of the Hon. J. Scott Harrison, who recently died, a son of his excellency, Wm. Henry Harrison, President of the United States at the time of his decease, was found in the dissecting-room of the Medical College of Ohio by his near relatives, where it had been brought by body-snatchers, immediately after his burial, who had broken into his grave for the purpose; and, as a matter of course, a shock to the feelings of the whole community has been the result! No little indignation has pervaded the excitement in consequence of the high position of the individual whose body had thus been so rudely desecrated, showing that there is no respect of persons among those engaged in supplying medical colleges with material; that wealth during life, usefulness, standing, influenceanything-does not prevent graveyard ghouls from bursting into one's tomb, dragging the body out, cramming it into an old, filthy sack by jamming head and knees together, tumbling it into a vehicle near by, as if it were but offal, carrying it to a medical college, into the dissecting-room of which it is lifted, from a dirty alley, by means of a windlass with a rope around the neck. Very considerable indignation has entered into the excitement in consequence of these facts coming to the surface through desecrating the grave of the Hon. J. Scott Harrison. Here was a man, than whom no one held a higher position; and yet his standing during life was no bar to the robbing of the grave of its body after death. If his remains were not respected, of course no one could expect immunity for himself or his friends.

Taking bodies from their graves for the purpose of dissecting has never had the sympathy of the community. They have viewed it with repulsiveness even in what may be termed its most favorable aspects; i. e., when the bodies of the deceased were known to be paupers during life, or criminals, who had never been of any use—in fact, the only benefit of their coming into the world has been the benefit arising from dissecting their bodies after death. That a feeling of abhorrence and indignation should be excited, on the discovery that the grave of a most prominent and estimable citizen had been broken into and the body dragged away to be dissected, is not to be wondered at. On the contrary, it is surprising that a mob was not formed, which, blinded by prejudice and rage, and igno-

rantly supposing that the medical colleges were in the league with the body-snatchers, had proceeded to acts of violence against all of the colleges. The moderation which has prevailed is undoubtedly largely due to the very sensible behavior of the relatives and friends of Mr. Harrison, and the judgment displayed by the newspapers in discussing the subject. The latter, in their articles, have given no encouragement to extreme views. Beyond the arrest of the janitor of the Medical College of Ohio, on the charge of aiding and abetting in robbing Mr. Harrison's grave, sending him before the Grand Jury by the magistrate, and "finding an indictment" against him by the latter, for which he is to be tried at a future time, no other judicial proceeding, we believe, has been instituted.

Physicians, of course, have no sympathy in this desecrating of private burial grounds. They abhor, as much as any one, the robbing of graves and dragging from their resting-places the bodies of respectable citizens, that the tyro in medicine may study anatomy upon. It is not to be presumed for a moment that the members of the faculty of the Medical College of Ohio ever gave the ghouls. who brought them subjects, any encouragement to enter suburban cemeteries in search of such; and, undoubtedly, they would have as emphatically disapproved it as any one. Physicians, more than any other class, understand the importance of the study of practical anatomy in order to be qualified for the discharge of their professional duties; yet, to disclose the hidden mechanism of the body to their students, they do not propose to descend to acts of baseness, and commit that which is shocking to the instincts of nature. They feel as much disposed as any one, and it would be as abhorrent to them not to do so. to treat with respect the bodies of respected deceased persons.

But it is to be hoped that good will come from this affair. The people, as well as physicians, know that a knowledge of anatomy can only be acquired by dissecting the cadaver. Descriptive lectures, plates, and models, while they are of use, can never give the *practical* knowledge which the physician should have to qualify him to dissect, with scalpel and bistoury in hand, *living tissue*, when occasion requires. Medical colleges must have sub-

jects, or they might almost as well close up.

But all the means for the study of practical anatomy

can be supplied by medical colleges to their classes without the committing of outrages and shocking the common sensibilities. Of course no one worthy of respect would ever consent that a member of his family, or his friend, should be placed upon the table of the dissecting-room to be dissected; but in our large cities hundreds die every year, who are bound to no one by any ties of affection or friendship, and who have for years been a tax upon the community. We see no reason why provision might not be made that the bodies of such persons after death should be dissected. They owe a debt to the public, which the use of their bodies for the study of anatomy would partly repay. Many individuals, from some vice of constitution, have always preved upon the community as criminals. In the case of such persons, the world has not only not been any better by their having been born into it, but it has been the worse for it; and certainly no one's feelings would be shocked by their bodies being devoted to the elucidation of human anatomy. It is really the only way that any benefit can be derived from their existence.

However shocking it may be to have private graveyards robbed, and have bodies of deceased friends dragged away to dissecting-rooms, yet such outrages will continue to be committed until the legislatures of the various States legalize some legitimate method for obtaining material. The body-snatcher can not be expected to have respect for the body of any one. With him all are on an equality. He knows no difference between rich and poor, saint and sinner. He robs the grave that is the most convenient for his depredations. We believe that the majority of those who are buried outside of Spring Grove Cemetery, during the lecture terms of medical colleges, in a radius of twenty miles around Cincinnati, have their bodies lifted by resurrectionists and conveyed to dissecting-rooms.

But all these depredations can be prevented by the enactment of proper laws; and no one, then, need fear that when he lays away in their grave, father, mother, wife, sister, brother, that the graveyard ghouls have desecrated

the grave.

We hope that renewed exertion will be made to influence the legislatures to enact proper dissecting laws—not laws containing so many exceptions and provisions as

to be no better than none at all; but such as really will, by what may be termed their liberality, do away with body-snatching and make safe private cemeteries. Such laws are demanded, and they should be enacted without delay. Medical students, too, will be relieved of a heavy tax upon their means to obtain the necessary dissecting material; for these ghouls require to be heavily paid.

AMERICAN MEDICAL ASSOCIATION.—This body held its twenty-ninth annual meeting at Buffalo, June 4, 5, 6, 7. It was called to order by the President, Dr. T. G. Richardson, of New Orleans, Louisiana.

The meeting seems to have been a success as regards the number of delegates and permanent members present, the interest taken, and the amount of business transacted. We have not yet been informed in regard to the number of papers read before the sections, the character of them, etc., but we presume the printed transactions will exhibit the full complement, and not inferior in quality to those of previous meetings.

In reference to the communication from the State Medical Society of Arkansas, notifying the Association that the Hot Springs and Garland County Medical Society was not recognized by the State Medical Society, and protesting against the reception of any member of that Society, it was decided that under the by-laws of the Association said Hot Springs and Garland County Society loses its recognition with the Association from date of its severance from the State Society.

Dr. N. S. Davis made the following appended report of the Judicial Council concerning the charges against the Michigan State Medical Society, referred by the Association at the annual meeting in June, 1877:

"The charge in this case was alleged violation of the Code of Ethics on the part of the Michigan State Medical Society, in electing, as a delegate to this Association, Dr. E. S. Ounster, of the University of Michigan, knowing him to be engaged in aiding and abetting the graduation of students devoted to an exclusive dogma in medicine.

"After a most careful examination of the Code of Ethics, as it has appeared in the Transactions of this Association from year to year, the Judicial Committee fail to find any section or paragraph in it that refers even remotely to the practice that constitutes the foundation of the charge under consideration. That any member of the medical profession proper should ever engage in teaching, examining, and certifying to the qualifications of students, knowing that such teaching and examination was to aid said students in obtaining a diploma directly admitting them into a fraternity of irregular practitioners was evidently not contemplated by the framers of

our Code of Ethics; and hence they inserted no clause or section bearing upon that subject. The only provision in the Code referring to those engaged in an attempt to practice medicine in accordance with some 'exclusive dogma,' is in the section regulating consultations at the bedside of the sick. If the Judicial Council of this national organization should assume that the section of the Code just referred to indicated the 'spirit' of those who framed and adopted it, and on that assumption apply it to matters and practices entirely foreign to those mentioned in the doctrine itself, it would not only violate all the accepted principles of judicial construction, but would establish a precedent in latitudinous construction of the Ethical Code more dangerous to the best interests of the profession than all the evils sought to be

remedied in the case under consideration.

"It is true that this Association has adopted at different times two resolutions, having reference to the subject involved in the charge against the Michigan State Medical Society, which still stand as expressions of opinion unrepealed. But these resolutions constitute no part of the Code of Ethics; neither is obedience to them enjoined by the constitution and by-laws on State and local medical societies as a condition of representation in this Association. Therefore, while deprecating the practice of aiding or abetting in any way the teaching and graduation of students known to be supporters of irregular and exclusive dogmas in medicine, as beneath the dignity of right-minded teachers of an honorable and liberal profession, your Judicial Council can find no clause in either the constitution, by-laws, or Code of Ethics, as they now exist, under which the charge against the Michigan State Society can be entertained and adjudicated."

Dr. Toner, of Washington, in view of the fact that there was an unwritten law which governed such cases, moved to refer the report made by Dr. Davis back to the Judicial Council.

The motion was seconded and discussed by Dr. Busey, of Washington, and also discussed by Drs. Toner, Davis, Woodard, Brodie, and Menees, but was passed over without action.

Dr. J. R. Bronson, of Massachusetts, offered the following preamble and resolution:

"Whereas, By the report of the Judicial Council submitted this day, we are informed that the Ethical Code of this Association is imperfect, in that it does not recognize by its letter a conceded violation of the spirit of our profession in its relation to irregular medicine; therefore,

"Resolved, That said Council be instructed to submit to this Association, at their next meeting, for its consideration, an amendment to the Code cov-

ering this omission."

The resolution was referred to the Judicial Council as a committee.

At another stage of the proceedings the Judicial Committee brought in the following report, presented by Dr. N. S. Davis:

"In obedience to the instructions of this Association, the Judicial Council, acting in the capacity of a committee, have unanimously instructed me to report to your Honorable Body the following amendment and addition to paragraph 1, article 1, of the second division of the Code of Ethics, under the general heading, "Of the Duties of Physicians to Each Other, and to the

Profession at Large,' and the special heading, 'Duties for the Support of Professional Characters.' The same, when finally adopted, to be added at the end, and to constitute a part of paragraph 1, article 1. The proposed addition is in these words: 'And hence it is considered derogatory to the interests of the public, and the honor of the profession, for any physician or teacher to aid, in any way, the medical teaching or graduation of persons, knowing them to be supporters and intended practitioners of some irregular and exclusive system of medicine.'"

. The report, under the rules, went over for one year.

Dr. Loomis, of New York, made an address in regard to a few of the more important advances in medicine which had been made during the past pear, and then passed to the consideration of the climatic treatment of pulmonary phthisis:

With reference to the germ theory of disease it was believed that the facts as now presented did not warrant its acceptation.

With reference to the etiology of typhoid fever no new facts had been elic-

ited regarding its spontaneous or specific origin.

The experiments of Heidenham had gone far to establish the fact that croupous pneumonia had a specific origin, and could not be excited by simple irritation of the respiratory passages.

Reference was made to Lancerot's description of a new form of diabetes,

due to changes occurring in the pancreas.

Reference was also made to several new discoveries made in physiology. Among these, Dr. J. W. S. Arnold, of New York, had demonstrated by a series of experiments that the *first sound of the heart* had a muscular origin.

Mention was also made of several comparatively new therapeutic agents, such as jaborandi, hydrobromic acid, thymol, and the alkaloids used as a substitute for formic.

Dr. J. L. Cabell, of the University of Virginia, Chairman of the Section, delivered an address, in which he maintained that the establishment of a general Board of Health was the indispensable measure to any systematic effort to inaugurate State medicine in any of the States of the Federal Union.

As to the value of sanitation in general in diminishing the death-rate, reference was made to the address of Mr. Edwin Chadwick, delivered before the British Social Science Association at Aberdeen, September 13, 1877.

Speaking with reference to the maintenance of the purity of the air within and around dwellings, Dr. Cabell remarked that the evidence of advance in public hygiene consisted not so much in the discovery of new facts or principles, as in more careful, exact, and honest methods of sanitary engineering, in conformity with well-known laws of sanitary science. It could scarcely need be said that one of the most fruitful sources of the impurity of the air around dwellings, and consequently of the air within dwellings, since the latter was constantly being

replaced by the former, was the damp condition of the ground, which, however well drained of subsoil water at first, was liable to subsequent contamination with liquid filth, whether arising from slops thrown upon the surface of yards or gardens, or from the dejections of animals. A soil well ærated by proper water-drainage, would, in a measure at least, oxidize the organic matters, and mitigate the generation of malaria. It would not, however, be safe to rely upon that to disinfect the excrementsodden soil in the streets of cities, and it became an important problem of sanitary engineering how to protect the atmosphere of cities from that source of contamination. That end could probably be secured by the best asphalt pavements, such as had been largely used in some of the cities of Europe, and had been successfully introduced in some parts of Brooklyn, and on the principal avenues of the national metropolis. No water or filth could penetrate them, and they were cleaned easily at less expense than any other pavement. A necessary condition, however, of the beneficial action of impervious pavements was the absolute freedom of the subsoil from the contamination which might arise from defective sewers, or from percolation of the contents of cesspools.

The following resolution was offered by Dr. J. S. Hib-

bard, of Indiana:

"Resolved, That hereafter it shall be the duty of the Committee on Necrology to confine their reports to the death of medical men who have been members of this Association, and at the time of death were still in good fellowship or honorably separated from the Association."

Adopted.

The President announced the following delegates: To European Medical Societies—Drs. Sims, Drysdale, Seguin, Daly, Halberstadt, Levis, and W. H. Pancoast. To the Canadian Medical Association—Drs. Brodie, Todd, E. N. Brush, and W. Clarke.

The following resolutions concerning certain legal relations of the insane, offered by Dr. Foster Pratt, of Michigan, in Section V., and referred to the Association, was

received and adopted:

"Resolved, That the personal restraint of the insane is an essential element of the medical treatment of their disease, the use of which, as a therapeutical agency, may be justified by their insanity, just as the use of it as a public agency, for the prevention of injury to person or property, is justified by their dangerous conduct.

"Resolved, I hat while none question the necessity for specific statutory provisions to regulate the restraint of those insane persons who are wholly

or partly a public charge, we maintain-

"That it is the duty of relations and friends, and it is also their natural and inherent right, whether declared or understood by statute, to retain and to care for their sick or insane relations as a private patient at his or their expense, in his or their home, or in a legally recognized and regulated hospital; and

"That the exercise, by them, of so much restraint as is essential to their proper treatment of his disease is not a violation of his rights of personal

liberty; and

"That their duty and right to exercise such remedial restraint are subject to State surveillance or legal limitations only so far as may be necessary to prevent their neglect of that duty or to punish their abuse of the right."

In an address by a member, the following doctrines were urged:

Arteritis of itself rarely caused sudden death in the puerperal woman. Phlebitis was a frequent source of sudden death in these cases, terminating

in pulmonary obstruction.

The injection of large quantities of air into the veins caused sudden death, but relatively the entrance of air into the veins of the puerperal woman was an infrequent cause of sudden death. The introduction of the hand into the uterus occasionally caused sudden death by facilitating the introduction of air into the veins.

Puerperal eclampsia was a most conspicuous cause of sudden death, but the mortality in that class of cases had been very much decreased by the prog-

ress which had been made in treatment.

Tetanus might give rise to sudden death in the puerperal woman.

Every physician should feel bound by professional obligation to thoroughly study the pathological anatomy of any case of sudden death, with the view, if possible, of arriving at the cause of death in any case which came under observation.

There were many other causes, such as ruptured heart, ruptured uterus, apoplexy, profound moral emotion, post-partum hemorrhage, mental excitement, shock, traumatism, etc., which were well recognized, and for that reason their special consideration was omitted.

Dr. Theophilus Parvin, of Indianapolis, was elected President for the ensuing year. Being introduced by Dr. Richardson, he addressed the Association in most eloquent and appropriate words, and returned thanks for the high honor conferred upon him.

On motion, the President declared the Association adjourned, to meet in Atlanta, Georgia, on the first Tuesday

in May, 1879.

MICROSCOPES.—For the accommodation of subscribers, we sometimes act as a medium between them and such as have instruments, books, etc., to sell. We will, therefore, state that a number of microscopes have been left with us for sale, ranging in price from \$30 to \$75. These are superior instruments, adapted to all the wants of a physician—the prices being a bargain that can not be easily had. Address Medical News.

THE

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PRIGINAL CONTRIBUTIONS.

Review of Contemporary Modern Pharmacy.

BY WM. A. GREENE, M. D., MACON, GA.

If we examine chemical and pharmical literature, we will find that a great number of men, and among them some of our ablest, have spent much of their time in pathologico-chemical researches during the past few years, and have astonishingly promoted the progress of this department of our science. It is a sad truth that hitherto our therapeutics have been based to too great an extent on rude empyricism, uncontrolled by pathologicochemical experience. For the establishment of rational therapeutics, not only the nature of the disease should be well understood, but it is necessary to know the action of the remedies, and the most recent and improved ones furnished by our honest and competent manufacturing pharmacists, and for the formation of a rational pharmacology we think a combination of their modes furnishes the surest practical results. But the more and the further we enter into the field of scientific examination for the promotion of rational medicine, the more we must see how much is to be done and how little a single individual can accomplish. It is then urgently and indispensably required that we should distribute the work. which is now being done. In this special department our pharmaceutical brethren have exhibited wonderful industry and progress. Every month brings new remedies, or improved modes of administering them, some new instrument or appliance of great therapeutical value. Pharmacy may well be called the younger sister in medical

science, another link in the fusion of the sciences. It has enlarged the field of experimentation to an almost unlimited extent, and in our own country its advancement has attracted the attention of the entire world.

I must confess to being partial to a multiplicity of remedies, and frankly assert that I am skeptical about putting away drugs altogether as among the absolute furniture of a past age, or else that hereafter they will only be prescribed or administered in accordance with strictly scientific rules, deduced from their physiological action. deliberately deprive ourselves of many powerful weapons to combat disease when refusing to investigate and experiment with the remedies constantly brought to our notice through the medical press of the country, frequently for no other reason than we do not personally know the manufacturers or present when they are compounded. I confess that at no time has caution and discrimination been more necessary in the selection of our remedies than at the present, because of the innumerable manufacturers springing up in every city of the land. To aid my professional brethren in this particular is my princi-

pal inducement in furnishing these papers.

The "ready-made pills of the day" have received from me more research and study than all other forms of medicines combined, because they are the most common and numerous. Very nearly every medicine required in ordinary practice is now in "pill-form," and a well filled pocket-case, containing twenty four vials, will furnish us an "Armamentarium pellulorum" sufficient for every emergency in our daily practice. There are so many manufacturers of these pills, of equal character, that it is difficult to say which we prefer. The intense competition in this business has brought out all the inventive genius of our pharmacists to excel each other in making the handsomest and purest pills. In this paper I take pleasure in directing the attention of physicians to what is known in the market as the "Soluble Pills and Granules," manufactured by Wm. H. Scheffelin & Co., of New York, which are the result of careful experiment and investigation by the proprietors, combining the requisites of perfect reliability as to quantity and quality of the material used, with a coating which is soft, transparent, readily soluble, and not affected by the changes of climate. I offer no apology for thus calling attention to the

obviously good qualities and general excellence of these The reputation of the manufacturers is too well established to doubt their being made in exact conformity to the formulæ, and of the very best material. Their quinine pills especially I found from analysis to be of exact weight, and of the best American bleached quinine, which no more requires to have more quinine added to make up deficincies, than if dispensed by your own druggist. I call attention to the fact that the coating of these pills is different from any other. The coating is a single one, perfectly soluble, and no sub-coating of a resinous character, consequently they are smaller than any other pill that is coated; in fact, the coating is so thin that there is no perceptible increase in their size, yet entirely sufficient to protect them from atmospheric influences and effectually covers all nauseous taste, rendering them more easily swallowed. I never have the least trouble in prevailing on small children swallowing them, if they are old enough to comprehend the meaning of the request to do so. It is also so transparent as to reveal the color of the mass. I find their solubility not in the least impaired by age, nor the efficacy of their therapeutic action disturbed. Their character has already gained the approbation of our most careful physicians. Their great solubility, an indispensable requisite to all covered or coated pills, can be easily tested by allowing a pill to rest on the tongue a few moments, when the peculiar taste of the medicine will be detected.

A new feature, peculiar alone to this house, is a number of granules of simple medicines, such as rhubarb, ipecac, etc., in such minute division that they can be combined at the bedside, and administered in almost any required proportions. Thus, that which would otherwise constitute a nauseous dose may be thus administered without creating repugnance. For instance, you can give a granule of half grain calomel, and half grain ipecac, and so on with any other medicine. They also furnish the most powerful medicines in this form, and it is a great and valuable advantage to physicians to have morphine, strychnine, arsenic, calomel, etc., put up in this acceptable form. These medicines require to be weighed with extreme caution, and given in the form of pills. Thus prepared, they obviate all anxiety and loss of time, and can be administered at once. Messrs, Scheffelin invite inspection and are anxious for their pills to be severely tested. By request they sent me promptly samples of all their pills, which for many months I have been subjecting to the severest tests, both in my laboratory and my practice, and in every instance they have given me

perfect satisfaction.

To meet increasing demands, this firm have increased the facilities of their laboratory, employing improved machinery of their own invention. A simple inspection of these pills, their beautiful shape and finish, is sufficient to convince any one that a master-hand has touched them. In discussing or reviewing the pills of this house, and commending them to the medical profession, I mean no disparagement of others, some of which are of equal value and reliability, as I have stated in a previous paper of this series, and doubtless there are those I have not seen or used, which are equally as acceptable. What I have written of these pills is true and correct, unless chemical science is a falsehood, and observation and experience are worthless.

The Minute Generators of Disease.

TRANSLATED AND CONDENSED FROM THE LATE NUMBERS OF "LA TRIBUNE MEDICALE," FOR THE "MEDICAL NEWS."

BY R. B. DAVY, M. D., CINCINNATI.

M. Pastuer, the most eminent representative of the germ theory of disease, has lately brought the subject again before the Academy of Medicine of Paris. The recent contradictory experiments of M. Colin, on the parasitic nature of charbon, the discussion on the union of wounds, and the best mode of dressing them, and the doubtful remarks of Prof. Leon Le Fort on the reality of the morbific influence of germs in all such cases, has provoked a new and decisive intervention of the great propounder of the germ theory. He has, moreover, several times promised some veritable revelations of startling interest: and they were anxiously awaited, as it is remarked that on last Tuesday the ordinary attendance at the Academy was increased and diversified by a number of exceptional hearers, whose white robes, black cloaks, and heads almost entirely shaven, proved them to be sons of Saint Dominic. They were there to hear the accredited father, and, up to a certain point, the infallible representative of the panspermatic church; which they did with religious and devoted attention; and the demonstrations which escaped them spoke well their approbation and contentment when the speaker made a thrust at the theory of spontaneous generation or its supporters. It is necessary to bear in mind that it is the great and dominant question of the spontaniety or non-spontaniety of normal or morbid generation which is concerned; and it is on this account that these discussions excite so much interest among certain people of black or white robes, who scrupulously seek and gather arguments having the sanction of science, which are favorable to their cause, and the dogmas they represent and preach.

In our search for the truth let us ask ourselves the question whether or not these new revelations of M. Pasteur are established, as he seems to believe, on a def-

inite foundation?

A proper reply to this question should be looked for in a correct analysis and conscientious criticism of the researches in question; but, for this, we prefer to wait for the publication of his discourse in full, since, having only heard it read, we could not appreciate its delicate points.

What we are permitted to say to-day, without mentioning the debate, is that M. Pasteur has once more touched upon this theme with the incomparable experimental skill and admirable clearness of discourse which is familiar to him. We have often remarked with what marvelous ease he places himself in this world of infinitesimal beings, where he is so much at home. He has just given a novel and brilliant proof of it; for he has made the acquaintance, and has, so to speak, become familiar with two new races of this terrible world, which constitute the invisible beings for our destruction. One of them is found in ordinary water, and has till now been confounded with the bacterium termo. This is a vibrio of which M. Pasteur gives the most minute description, and which accompanies its vehicle (ordinary water) in all its uses, however multiplied. Thus when the surgeon carelessly, and according to custom, dips the sponge into ordinary cold water to wash a wound, or denuded surface, he unconsciously introduces a dangerous enemy into the organism which he seeks to preserve from disease and its dangerous consequences. If it is dreamt, on the other hand, that the sponge itself, the charpie which is to be placed on the wound, all the instruments and even the fingers of the operator are impregnated with the infectious germs—microbes as M. Pasteur calls them—we tremble before the danger which the intervention of the surgeon brings to the patient, when such intervention passes for and should be an absolute protection. There is, it is true, and very happily too, a vital resistance of the organism, without which where is the patient who could resist these microbes, and his surgeon—the former being carried by the latter?

"Thus," exclaimed M. Pasteur, "if I was a surgeon, I would never approach my patients without having first passed the blade of the knife to be used through a flame, submitted to from 110 to 120 degrees centigrade the water, charpie, and other dressings, and even passed the hands rapidly through a flame, which is not difficult, and no more dangerous than passing a live coal from one hand to the other."

While he pronounced these words with serious and prophetic voice, what was going on in the minds of the numerous surgeons who listened to him? One of them in a conspicuous position in the hall, holding his voluminous head between his hands, completely veiled his features; the others, for the most part, looked at each other and exchanged inquiries with an air of astonishment and restlessness; while M. Ricord alone allowed a skeptical smile to escape him. M. Ricord has seen so many things in every world that this world of microbes does not appear to startle him.

However this may be, we have had the bacterium of charbon, the vibrio of septicemia, we have now the vibrio of purulent infection, and may expect others which M. Pasteur has promised us. He will no doubt fulfil his

promise, for he is indefatigable in this research.

Nor is this all. He touched during his discourse on pathogenetic questions of the first order; such as the formation and absorption of metastalic abcesses, the generation of pus globules, and even in the normal condition, the formation and life of the organic cell.

We promised to give a more minute account of the subject spoken of last week, and we can not do it better than by quoting the author's own words, reserving only the right to select the parts most interesting to the physician:

"I will speak of a vibrio which has not yet been described, and whose properties throw a new light on that

great terror of surgery, purulent infection.

"When a few drops of ordinary water are taken for the inoculation of a crop in a vacuum, it may happen that only a single organism is obtained, for ordinary water often contains only certain germs when taken in very small volume. This makes it an excellent method for

separating germs.

"If different kinds of water are added to the crops already found, the vibrio with which I wish to entertain the Academy is often met with; and here are its principal characters: It is a being at the same time arobic and anarobic; in other words, cultivated in the air, it absorbs oxygen and returns an equal volume of carbonic acid gas without the formation of hydrogen. In these conditions it is not a ferment cultivated; on the contrary, in a vacuum or in the presence of pure carbonic acid gas, it multiplies, not without undergoing this time a veritable fermentation with disengagement of carbonic acid and hydrogen, since life is realized without the air. This is a new confirmation of our principle: Fermentation accompanies life without air; a principle which I am persuaded to believe will some day control our knowledge of the physiology of the cell.

"In the first hours of the development of these vibrio, whose rapidity in contact with the air is considerable, they have the form of very short sausages revolving on themselves, whirling or advancing and balancing themselves. They are soft, gelatinous, tortuous, and dart about notwithstanding their size. Soon all movement stops, and then it resembles perfectly the bacterium termo, if we imagine the latter to be slightly constricted in its length, although, in reality, it is very different from it. If a few drops of a liquid containing these organisms be introduced beneath the skin of a guinea-pig or rabbit, pus commences to form, and becomes visible after several hours. In the days which follow an abscess forms, containing a great abundance of pus. This, people will say, has nothing surprising about it, since it is held that in the present state of our knowledge, any solid body whatever, particles of powder, the piece of garment which the ball carries before it, all produce pus. I will add that these last experiments have been realized by us with the matters subjected beforehand to heat, and not containing microscopic germs. But the activity of our microbe, considered as the generator of pus, when even that it should owe this property to the fact of its being a foreign substance, is sensibly augmented by the other fact of its

possible multiplication in the animal body.

"To convince any one the following experiment is sufficient: A crop of these organisms is divided into two halves; one is heated to a temperature of 100 or 110° centigrade, which kills the organism without altering its form or volume. After this they are separately inoculated into two similar animals—equal portions of one and the other—heated and unheated portions being respectively introduced. It will be seen that the latter gives rise to much more pus than the former, which produces it, however, like all inert solid bodies. Let us add that if the pus formed by these two living animals be cultivated, that coming from the animal which has received the heated organisms is absolutely sterile, while that from the other animal reproduces the same organism in abundance.

"At all odds, here is a new microscopic organism capable of living within the animal body. We understand the bacterium of charbon and the septic vibrio to be agents of contagion, disease, and death, not because they manufacture chemical poisons, but because the animal economy affords them the means of fertilizing and multiplying. We have now a third variety equally capable of propagation in the living body, and which is capable of provoking a pathological condition different from those which arise as a consequence of inoculation with the first two organisms mentioned. This is a proof that the pus formed by our organism is somehow connected with its specific nature. The quantity of pus, for example, furnished by the bacterium and septic vibrio by inoculation, etc., is so trifling as to pass often unnoticed.

"When introduced under the skin does our newly discovered organism remain confined in all cases? Can it not, following the example of the other organisms spoken of, distribute itself throughout the body? Experiment replies in the affirmative. The microbe can propagate itself in all the muscles, can reach the blood, lungs and

liver, and produce metastatic abscesses in all of them, and, in a word, purulent infection and death. This invasion of the whole body is, nevertheless, much more difficult than by the producer of charbon or that of septicæmia. While the inoculation of the smallest quantities of these last organisms brings, so to speak, certain death, that of the microbe in the same quantity confines itself to the production of abscesses which get well, either by opening themselves and suppurating, or by absorption of the pus and disappearance of the organism, overcome by what I called a moment ago life, vital resistance, or natura medicatrix. However, if the number of abscesses is exaggerated by the number of inoculations, it frequently happens that cure can not be effected, as, in this case, the organism invades the entire body; the muscles and liver being filled with them.

"We have said that if this new organism is raised to a temperature of 100 to 110 degrees beforehand, and thus deprived of life though retaining its form and volume, provokes when introduced under the skin and in the same manner as a foreign body would, abscesses containing pure, odorless pus, deprived of living microscopic organisms. We have not yet had an opportunity to produce abscesses in the viscera by this method of inoculation. In these conditions the dead organism acts only locally, But by injecting the inert bodies directly into the blood the formation of metastatic abscesses can be provoked, and that quite easily, by simply injecting the matters, containing either the living or dead microbe, into the jugular vein. In this case the lungs, and particularly the liver, are filled in twenty-four hours with an infinite multitude of abscesses in all stages of development, from the simple inflammatory discoloration to the small white pustule, filled with pus and surrounded by a reddish areola. But as regards cure—that is to say, concerning the disappearance of the abscess, things go very differently in the two kinds of inoculation. Often the animal inoculated by the living microbe dies rapidly, and any portion of the liver or lung brought in contact with a sterilized liquid reproduces the microbe. If the consequences of the inoculation are not fatal, the disappearance of the abscess and the organism in the viscera is slower than in the case when the dead are inoculated.

"But it is necessary to bear in mind the foregoing, that

pus containing living microscopic beings, whose life is possible in the animal economy, entails greater disorders and more difficult absorption than pus, which may be

termed pure.

"We have, then, an example here of purulent infection localized in the viscera, and caused by a foreign body or pus entirely deprived of living organisms. A foreign body causes the formation of pus, pus globules themselves have the same faculty; so that it is true, to speak metaphorically, that pus engenders pus."

SELECTIONS.

The Use of Opium in Cerebral Anæmia and Affections of the Heart.

M. HUCHARD has pointed out, in the Journal de Therapeutique, the good results obtained by the administration of opium, in patients suffering from insufficiency or aortic obstruction. In the course of certain affections of the heart, when the attacks of suffocation and dyspnæa have acquired an extreme intensity, injections of morphia are of the greatest service.

To support this view, M. Huchard, besides his own personal observations, quotes the facts published by Levy, of Vienna, 1867, by Renauld, in 1874, and by Vibert, in 1875. The communication of M. Huchard presents two points

deserving of attention:

1st. The popularization of the employment of opium in affections of the heart.

2d. The theory by which the good results are ex-

plained.

M. Huchard recognizes that other medical men have prescibed morphia in affections of the heart, but his desire has been to fix the indications and contraindications of the method.

It has been known for a long time that opium in doses of from one to two centigrammes, among other physiological effects, produces slight excitement of the circulation, exhilaration of the spirits, animation of the face, and an increase of muscular power; but if, after the appearance of well-marked phenomena of excitement, the dose be in-

creased from five to ten centigrammes, depression of the circulation and tendency to sleep supervene. Professor Gubler, in his Commentaries, insists on the utility of opium in want of stimulation of the nerve centers, due to impoverished or altered blood; and Dr. Vibert, at the end of a memoir published in the Journal de Therapeutique, 1876, concludes that the previous employment of injections of morphia in the operation of thoracentesis, and even in all operations giving rise to syncope, prevents the occurrence of such accidents. M. Huchard employs opium in the hope of utilizing its hyperæmient properties on the nerve centers, and particularly on the brain. In patients suffering from aortic obstruction or insufficiency, with symptoms of suffocation, dyspnæa, cold sweats, pallor of the face, etc., he has seen these formidable symptoms disappear after the injection of one centigramme of morphia.

If opium be useful in cases of aortic affection accompanied by vertigo, buzzing in the ears, tendency to giddiness, cephalalgia, it is because such symptons are those of cerebral anæmia, and that cerebral ischemia is a frequent complication, not only of aortic insufficiency, but of aortic lesions in general. Hence the administration of opium is indicated in the course of affections in which

cerebral ischemia is equally met with.

In M. Huchard's opinion, as in that of Professor Gubler, opium may be used in certain forms of anæmia, as it acts as an excellent tonic owing to its congestive action on the brain. It may be prescribed for cachectic or phthisical patients, for in such cases, besides the tonic action of opium recognized by Sydenham, we also utilize the power of this medicine to calm the dyspnæa and the cough.

Carbolate of Soda in Whooping-Cough.

M. Pernot (Lyon Medicale, September 23, 1877) considers that he has discovered a specific for this trouble-some affection in phenate de soude," and gives details of cases in which, after other means had completely failed, he was able, by the use of it, to effect a complete cure in from ten to fourteen days. He places about 40 grammes of the crude salt in a porcelain capsule, and heats it over a spirit-lamp so as to disengage carbolic vapors, the

child being kept in the vapor a short time at first, and a longer time as he becomes more accustomed to it. In the most rebellious cases he has not required to use the treatment more than three times a day, and in most cases it has only been necessary to use it night and morning. He discusses the mode of preparation of carbolic acid and its salts, and ascribes the curative properties of the phenate of soda to the tarry compounds which it contains. "My observations," he says, "are now numerous; they, for the most part, resemble each other, and, speaking generally, we may sum up the results in the following words: 1st. There is a notable diminution in the number of 'kinks' after two to ten days' treatment. 2d. The respiration is less painful, less anxious. 3d. The 'kinks' are of shorter duration. 4th. There is less vomiting, possibly because the 'kinks' are shorter. 5th. Finally, the most stubborn cases, if I may so express myself, cease to advance from the commencement of the treatment, then diminish in intensity, little by little, and afterward more rapidly."—Glasgow Med. Journal, Jan., 1878.

Glycerin in the Treatment of Internal Hemorrhoids.

Dr. George B. Powell writes in the *Practitioner*, April, 1878:

The results of the administration of glycerin have been striking and satisfactory. My first case was so extraordinarily rapid and successful, that I hesitated to publish it till further trials had convinced me that the results ob-

tained were due, undoubtedly, to the drug.

Mrs. B., aged fifty eight, requested my attendance on January 16th, to prescribe for a troublesome cough, to which she had been of late years subject at this particular season; there was simple catarrh of the larger bronchi, with scanty expectoration; she likewise intimated, parenthetically, that she had been for years affected with the "bleeding piles," and for the last two years the tenesmus and discharge of slimy mucus, mixed with blood, had been particularly severe, running from her in bed, and "shooting from her when she coughed." She did not expect any relief from the latter affection, but thought if her cough was improved it would give her a modicum of comfort,

From her own statement, she had had no proper sleep for two years, in consequence of the tenesmus and constant irritation in the lower bowel. I may add, from her own report, everything had been tried to relieve the tenesmus, suppositories included, without effect. I prescribed the following:—

 R. Glycerinæ,
 3 jss

 Acid. citric.,
 3 ij

 Morph. acet.,
 gr. j

 Vin. ipec.,
 3ij

 Aquæ
 ad. 3viij, M.

One ounce ter die.

My next visit was on the 19th, and I was agreeably surprised to find the tenesmus and discharge entirely ceased, and although the cough had not improved, she could pass a comfortable night, and "felt better than she had done for years." The cough continuing distressing, she desired to discontinue the medicine which had exercised so beneficial an influence over the lower bowel, as she considered the sudden stoppage of the discharge made her cough worse. To a certain extent she was right, for as the cough improved, all the former painful symptoms reappeared, though in a minor degree. She then returned to the use of the glycerin, and after two bottles she expressed herself as well as ever she was, and up to this date, March 9, she has continued well.

My next experience was in a case of a man of intemperate habits, who, "after a spree," invariably suffered from bleeding piles, with great pain on defecation, I prescribed the glycerin with citric acid and tincture cardam. co., and saw nothing more of him for three weeks, when I met him accidentally, and on inquiry found he had been completely cured by the one bottle. In two other cases of hemorrhoids, one occurring in pregnancy, great relief was afforded.

I am convinced we have in glycerin a therapeutic agent of great value. I am inclined to believe its action to be of a specific nature, but its *modus operandi* I am unable to speculate upon with my present experience.

In the hemorrhoids of drunkards it will be found perfectly reliable and effective, and administered with citric acid and tincture cardam. co. forms a pleasant and agreeable mixture.

Pathological Society of London.

Dr. Dickinson showed a specimen of Ulceration of the Intestines in connection with Granular Kidney. He said that two years ago, in his Croonian Lectures, he had related two cases of granular kidney in young subjects, both of whom died from peritonitis due to perforation (or nearly complete perforation) of the bowel from ulceration. This ulceration resembled that of dysentery, except that it occurred in the ileum, and not in the colon. Dr. Greenhow had since mentioned to him a third case of ileal ulceration and purulent peritonitis in a girl aged twenty, the subject of granular kidney. The present was the fourth case with which he was acquainted. The patient was a young man twenty years of age, who had marked symptoms of chronic Bright's disease, copious pale albuminous urine, very little dropsy, albuminuric retinitis, extreme hardness of the pulse, and hypertrophy of the heart. He had occasional hemorrhage from the bowels and nose, as well as the retinal hemorrhages. The supervention of peritonitis (from which he sank) made Dr. Dickinson think the case to be parallel to the other three. The kidneys were markedly granular and fibroid, and an interesting fact was that the renal lesion was the direct outcome of an attack of scarlet fever fourteen years before. At that time, when he was six years old, he had scarlatinal dropsy and ever since his health had been bad. The ileum was ulcerated, and in two places perforated; the peritoneal sac containing purulent fluid. There was no tubercle and no evidence of typhoid ulceration. As to the way in which the ulceration arose in these cases Dr. Dickinson was unable to speak with certainty; he believed it to be an actual result of the granular kidney with which it was associated, and it might be due to hemorrhage into the wall of the gut. The President remarked upon the youth of all the patients, and asked whether any explanation could be given of this. Dr. Dickinson said that in the present case the renal disease was clearly due to scarlet fever, and in another it was due to calculous affection. The President asked, further, what proof was there of the absence of typhoid fever? Was the temperature raised? It was remarkable that in not one of the cases was the patient advanced in life. Dr. Dickinson said there was no history of typhoid fever in any of the cases, and two of them were under observation, for a long time. There was no noticeable rise of temperature, and the chronicity of the disease put any acute fever out of the question.—Canadian Jour. Med. Science.

Dr. Alfred Carpenter on Alcohol.

Dr. Alfred Carpenter's medical deliverance on Alcohol has not unnaturally excited attention beyond the bounds of the Medical Society. The question is a very large one, with commercial, fiscal, dietetic, physiological relations, besides pathological ones. As an illustration of the commercial aspect of the use and non-use of alcohol, we may say that the Temperance and General Provident Society in thirty-eight years has accumulated a fund of more than two and a quarter millions sterling as the savings and property of surviving members. But the sanitary and medical bearings of alcohol alone explain the interest with which the public regard the subject when treated in a way they can partly comprehend. Dr. Alfred Carpenter showed a decided aversion from those easy assumptions which have been so current with teetotalers. He withheld his assent from the view that there is no utilization of alcohol in its passage through the body. He would not consent to abolish it as a mere luxury, nor would he assume that because a large dose of alcohol is injurious, a small one would likewise be so. He reviewed the facts ascertained as to its action on the blood, reducing the power of the corpuscles to absorb oxygen, abstracting water from the blood-discs and making them adhere, increasing the coagulability of the fibrinous or plastic part of the blood, and its tendency to be deposited in vessels or organs-effects surely forthcoming when the proportion of alcohol to water in the blood exceeds one part in five hundred, and leading to those morbid appearances with which pathologists are familiar. He maintained that the alcoholic drinks commonly used, and taken, as they commonly are, undiluted, and very often unmixed with food, "must be hurtful." Surprise is expressed that such discoveries have not been made before. This feeling is natural, and we only mean here to say one or two words in reply to it.

The first is this: that physicians are now concerned much

about the origin of refined processes of degeneration, the postponement of which is one of the great ends of medicine, and one of the great secrets of longevity. Not content with curing actual and gross disease, they aim at averting any departure from the proper structure of tissues and organs, or the enjoyment of perfect functional health. They want all men to live longer. In order to do this, the aim must be to prevent disease as well as to cure it. In this way they have come to consider the action of alcohol, and, without going into controversial details, certainly find it to be a most potent factor in producing degen-

erative changes in tissues.

Our second remark is this: that while the case is made out against any but the slightest use of alcohol, and this with meals, there is a great deal yet to be done by physicians in elucidating the physiological and pathological action of the temperate use. Some recent statistics show, or seem to show, that, according to the experience of the Temperance and General Provident Society, the abstainers are more liable to death by lung disease, by heart disease, by zymotic disease, and by casualties; while moderate drinkers are more liable to death by nervous disease, by liver and kidney disease, and by dropsy. We can well believe, as the same statistics show, that, out of a thousand insurants of the two classes respectively, abstainers and carefully sifted moderate drinkes, four of the latter died to three of the abstainers. We consider that, if anything is made out, it is that any considerable quantity of alcohol, in ordinary constitutions, lead infallibly to mischief. But we want this subject treated carefully, in a truly scientific spirit, as if there were no moral or commercial interests attached to it, feeling assured that the more dispassionate the medical discussion of it the more will it help the cause of health and morals.—Canadian Jour. Med. Science.

Too Much Pharmacy.

SHADE of the "great Ingin Doctor" defend us! The package that has just been laid on our table, during our absence, is one more addition to the scores that have preceded it, during the last two or three years, of "physicians' samples," accompanied in each case by a circular or

pamphlet setting forth the peculiar excellence of "our preparations," "made after our improved formula," "warranted to keep for any length of time in any climate," with the "hypophosphites chemically combined with the cod liver oil" and the whole "perfectly emulsified and rendered very palatable," with an insinuation that patients, after they have tried it "pine after it"-or the assurance that "our pills are the only reliable gelatine-coated pills made," all others being worthless on account of defective manipulation in their preparation, etc., etc., and closing by an array of testimonials from S. Q. M. D., and a number of other gentlemen of high standing in the profession, and the injunction that in prescribing the physician should not, by any means, fail to state clearly that he must have the preparations of the "Always correct pharmaceutical company," or none at all! "Give us a rest!" "Hold up!" for the Lord's sake let me catch my breath or I must vomit or burst! How can I take and retain all these things? Surely you don't expect me to give them to other people who are already sick when I have the positive statement of scores of "reliable gentlemen" that your preparations are all unreliable, while only one firm vouches for the reliability of any one of them!

And surely you have not thought of the financial condition of the men who ordinarily essay to conduct a prescription drug store. If all our injunctions are to be followed there must be a lengthening of the shelving, and the preparations of each one of your firms must appear there; and for the sake of convenience and in order to avoid confusion, we must have a long row of cans labeled "Ol. Ricini Smithii"-"O. R. Jonesii"-"O. R. Brownii," etc. When this is carried through the whole list of samples and compounds of our already numerous and rapidly growing materia medica, with this numerous list of special formulæ added, where shall we find the man or firm with capital to run a drug store? Not in Arkansas; for neither Mr. Stewart, Mr. Astor, nor Commodore Vanderbilt sent legacies here! Our case is hopeless, Mr. Editor: we can't "keep an assortment!" Allow me to suggest, then, Mr. Editor, that we fall back on first principles, and give to us, by authority which all can acknowledge and respect, a pharmacopæia that will instruct us fully in the preparation of the various tinctures, alkaloids, extracts, active principals and other chemicals to be used as medicines, and give us less of polypharmacy—yes, none of it—and teach the physician, or let him learn, the action of his remedies, and when he wants his patient to have a certain article, let him prescribe it, and if need be, give us laws to see that the article ordered is furnished in it purity. Can we do it? Let's see what some one else has to say next.—D. H. D., St. Louis Clinical Record.

Genesis VII.

BY HIRAM CHRISTOPHER, M. D., OF ST. LOUIS.

THE evidence that warrants the belief that this world, in all its parts and departments, had, as its author, an intelligent being, is well-nigh inexhaustible. We have seen that the phenomena of living beings most unmistakably point to such an origin, and that such an hypothesis alone can account for all the facts they present. The conclusion, therefore, which they, indeed, oblige is, that the lifeagent is spirit as to its nature, and supernatural as to its origin, or realm of being; that it is, indeed, that power that impregns life in all creatures of whatever grade or order; and the only power competent to originate and perfect so great and complicated a work. I shall now endeavor to show by facts furnished by one of the leading scientists of the day, that the phenomena of death oblige the same conclusion; and that the decomposition of organic substances, and the return of their constituent elements into the inorganic world whence they were taken by the life-agent, are effected by means which are also supernatural; and that these means are a provision especially designed for the work of decomposing organic substances, and are essentially necessary thereto. The uniformity and universality of the process of the decomposition of organic bodies, as well as the nature of the process itself, will show that such a provision was absolutely necessary to the end in view, and proves conclusively that intelligence underlies the organic world as respects both its origin and destruction.

The temporary existence of all living beings on the earth was contemplated in their creation. All are necessarily mortal, and were designed to be so. The end or purpose contemplated by their existence, and the means

by which the individuals of species are produced, required that individuals should pass away by death, and be followed by others. The nature of the work which living beings were designed to effect in the world was such, and its extent so vast, that generations of beings were required for its accomplishment; and when we contemplate what vast numbers of living beings have existed on the earth during all the geological ages of the past, and observe what a great work they have wrought on the earth, and then consider the time that was necessary for this work. we can not fail to see that some great purpose was in view, to the accomplishment of which all these were necessary. In this great work vast have been the accumulations of the reproductive system. The land has groaned under the tread of monsters that made the earth unfit for man as a dwelling place, and the seas have trembled under the motion of the vast hordes that have swarmed their waters. The remains of many of these now lie entombed in the strata of the earth. Multitudes have come upon the earth, lived their day, wrought their work, and passed away, leaving but little trace of their existence. All these multitudes were produced by the one single system of reproduction; and great as its work has been, it is yet capable of an indefinite work in the future. There is no practical limit to its operation but the supply of inorganic material, and were this unlimited, the work of the reproductive system would be equally unlimited. But it is not difficult to conceive that a time may come when exhaustion of material will take place; for what has happened locally may happen generally. Deserts which are now local may ultimately extend over the whole land, and then living beings would cease to appear, because of exhaustion of inorganic material. To guard against such a contingency, and to continually afford the necessary supply in kind and quality, it was provided that living beings should die, and their dead organisms decompose, that their constituent elements might return to the inorganic world, and thus preserve the required equilibrium between the organic and inorganic kingdoms. Without death the earth would soon have been overstocked, and without the decomposition of their dead bodies, and the return of their constituent elements to their original realm, dead organisms would soon have filled the earth and made the further appearance of individuals impossible. To provide against such results, destructive of the original purpose, causes of death and means of decomposition were ordained. Yet all these designs and adjustments, we are told, are the

work of physical forces!

As respects the means by which the ultimate decomposition of organic substances is to be effected, physical agents have heretofore been considered as the only means necessary for this work. We have been taught by chemists to consider these agents as alone sufficient. They have taught us that, when the body is dead, inorganic chemistry takes control, and breaks up the combinations formed by vital chemistry or the vital agent, and gradually carries the organic substances back into the inorganic world. They have told us that the material elements that compose the organism of living beings are held together in their vital relation only so long as the body is living; that, so soon as it is dead, decomposition begins under the influence and action of physical agents. They supposed that the presence and action of heat and oxygen were all that were necessary. It was supposed that vital and physical chemistry were in such antagonism in the living organism; and that the elements of its structure were in such a high state of tension that it only needed the withdrawal of life to put the constituent elements under the full control of physical agents, and by their action alone to convert organic into inorganic matter. Decomposition of organic bodies was regarded as a natural or spontaneous process, and was supposed to begin as soon as the life left the body-that it needed but this for the whole organism to fly to pieces, just as the particles of glass in a Rupert drop fly asunder when the state of tension is broken.

But recent investigations of the processes of fermentation and putrefaction, and some discoveries regarding the cause of some contagious diseases seem to indicate that the theory as to the natural or inherent instability of organic bodies is not true. This supposed instability of organic structures, especially those of more complex forms, is shown by the facts revealed by these investigations to have been an incorrect conclusion from observed phenomena. Organic matter, even that of the quaternary bodies, is not nearly so instable as it was once thought to be. It would seem that these bodies do not undergo de-

composition spontaneously when the life-agent has been withdrawn, on account of an inherent instability of structure, as was the view formerly entertained. Baron Liebig regarded the process as one of combustion, the oxygen of the air, aided by a proper degree of temperature, uniting with the more readily oxidizable elements of the organic body. It was with him a process of oxidation. If this view were true, it would follow that organic bodies would always decompose if contact with oxygen be allowed. But it is now known, as a result of experiment, that organic substances will remain unchanged for an indefinite time even under pure oxygen, provided all con-

tact with dust-laden air be prevented.

Though heat was regarded by the older chemists as necessary to oxidization, as it is in almost all cases, it was considered only as an adjuvant, it being the property of oxygen to unite with substances at a certain degree of temperature, and to part from them again at a higher degree. It is known to be necessary both to the union and decomposition of substances, organic as well as inorganic, and in many cases of the latter alone necessary. It is also necessary to the functions of life. Though living organisms live and flourish under a very low degree of temperature, as in the Arctic regions and on high mountains, yet, for the most of them, heat in a considerable degree is essential to their growth and reproduction. In winter the functions of vegetable life are suspended because of the low temperature. In the spring, when the temperature has reached the proper and necessary degree, these functions become active, and we again witness reproduction. Heat, therefore, is essential to these vital functions. Light also is necessary. But these agents are not the source of life, nor are they the vital principle. The plant was alive when these agents were inactive. All that we can say for them, therefore, is that they are necessary to the functions of life. The Siberian mammoth was entombed hundreds of thousands of years ago, in all probability, yet its flesh was as sound and sweet when the animal was disinterred as when it was entombed. The low temperature prevented decomposition. Still, it does not follow from such facts as this that heat is the cause of decomposition, though it certainly appears so. During a battle, when men are suddenly cut down in health, and under a hot sun, they rapidly undergo decomposition. Here again it appears that heat and oxygen are the sole agents effecting decomposition; for if it were winter, with the temperature below the freezing point, there would be no decomposition. Thus it would appear as if heat alone were necessary to set in action the decomposing forces. Such is the case in part. There can be no decomposition in its absence. And neither can there be vital activity. This is an important fact, and deserves consideration. It shows that, after all, the necessity for the presence of heat in decomposition arises from the fact that it is necessary to life, that decomposition takes place because connected

with some vital process or action.

Experiments have shown that the agent that effects decomposition in connection with heat is not oxygen. As already stated, when pure air or oxygen is kept in contact with organic matter, and under an ordinary degree of temperature, no decomposition takes place. Professor Tyndall says that he "opened a number of tubes containing infusions of flesh, fish, and vegetables, which had been hermetically sealed for over a year, and exposed for weeks to the heat of the sun of the Alps and to the warmth of a kitchen, and when opened the infusions were perfectly clear and sweet, showing no signs of decomposition." But when these infusions were exposed to the air at the ordinary temperature, it was found that they became cloudy and odorous; and then the microscope revealed the presence of great numbers of living organisms. Decomposition and putrefaction had set in. conclusion was, therefore, natural and unavoidable, that decomposition was in some way dependent on the presence of these living organisms, and that they came from the air.

The investigations that have been made during the last two decades, of the processes of fermentation and putre-faction, have led to the discovery of some of the most important facts that the labors of scientists have ever given to the world. For a long time it had been known that fermentation was attended by the appearance of a mass of cellular substance which was observed to increase in quantity as the fermentation continued; but the phenomenon was not understood until it was discovered that this cellular substance was really a living organism, whose increase in size or quantity was the growth of a living being. Some of the older chemists recognized these cells

as a vegetable growth, but supposed that they originated spontaneously in the fluid during the fermentation. They did not even suspect that they had any agency in the process, either in originating it or in carrying it on. They regarded the fermentation as being the result of heat and oxygen—a purely physical process by physical agents, and the cell-product as an unexplained accident. What is now known to be the real cause of fermentation was never suspected by them. With them it was purely a physical process. So Regnault taught more than twenty years ago, and he was abreast of his times. He states, "If grape juice be collected in a bell glass completely filled with mercury, it will remain unchanged for several days; but if a few bubbles of oxygen or atmospheric air be introduced into the bell glass, a considerable volume of gas will be disengaged."* It was his view that oxygen occasioned the decomposition of the grape juice. He does not seem to have even suspected the true cause of decomposition or the nature of the process. Had he conducted his experiment as Prof. Tyndall would now do, he would have discovered, if not the true and real nature of the process, at least, that no gas was disengaged. would have been no decomposition of the juice—no fermentation. The true explanation of such phenomena was reserved for a later day.

It was long since that the microscope revealed the existence of an invisible world teeming with life; of organisms whose minuteness is well-nigh incredible; but it was not known until recently what part they play in the economy of nature. They seem to have been rather objects of curiosity than of affording any ground of special economic or scientific interest. But when Pasquer ended his investigations as to the cause of disease in the silk worm, a new and wide field was opened. Another world of busy workers was brought to light, workers of good and ill. Though invisible to ordinary vision, yet they are extremely numerous; though recognizable only in fluid or semi-fluid substances, yet they fill the air we breathe, as thickly as motes a sunbeam; and though almost infinitely minute in size, yet they are by no means correspondingly insignificant as to the nature and extent of the work they do. They are powerful for good or ill. They

^{*} Regnault's Chemistry, Vol. II. p. 505.

bring both to man. They were appointed for a great and important work in the world, a work which proclaims their power and numbers. Their germs in vast numbers float unseen in our atmosphere, and hundreds crowd into a drop of an organic fluid. Their beginning was coeval with the first of earthly beings, and their work contemporary with death among living organisms. They are the ultimate carrion eaters and scavengers of the organic world. Though their footprints are not seen in the sands of the ages, yet their remains are not absent from the strata of the earth. Their skeletons lie entombed in the crust of the earth, and to-day serve a valuable purpose in human art.* Lying beyond the boundaries of human vision, and unfit for uses which many other organisms lend to man; yet they serve him in things which lie beyond the range of the higher forms, and accomplish for him a work absolutely essential to his welfare. Their existence in the beginning of living organism on the earth was, therefore, in anticipation of wants occurring all along the ages of life on the earth, and demonstrates that a mind grasped all the phenomena of earth, and an intelligence presided over the whole, at once capable of comprehending the needs, wants and contingencies of life on the earth, and of meeting these with means perfect and adequate. The function of nutrition called for a wide field of supply, and those of growth and reproduction supplied the want; but the agency of nutrition has been found necessary to the opposite state of organic bodies—their growth and putrefaction; so that nutrition is found to be not only a process necessary to life, but also to the purpose of decay and ultimate decomposition of organized bodies.

Some late and careful experiments in regard to the processes of fermentation and putrefaction have shown that these are really and truly vital processes, and not physical, as heretofore considered—that the decomposition of organic substances takes place only in connection with nutrition, and as a consequence thereof. Two phenomena are conspicuous in these processes—phenomena readily recognized, viz: the nutrition of living organisms and the decomposition of their pabulum, and seem to place beyond question the fact that there can be no decomposition of organic substances without the concurrent nutrition of

^{*} Lyell's Elements of Geology, p. 24.

living organisms. What the larvæ of the fly do in a dead animal, the bacteria also do. The one are visible, the other are not. The former were deposited by the fly as eggs; the latter, as germs, came from the atmosphere, the ova of former generations. Both nourish, grow, mature, and reproduce, as do all living organisms. Hence, the primary and leading functions of the organic world are nutrition, growth and reproduction. These are its primary phenomena. The phenomena of death are but the consequences or results of the phenomena of life! It is possible, then, that phenomena so linked and dependent are but the provisions of physical agents, or of the passive forces of matter?

There is nothing peculiar or exceptional in the nutrition of microscopic organisms. If the decomposition of organic substances attends it in one instance, as there is uniformity in the laws of nature, we may be certain that it universally and invariably accompanies it. Sugar, we know, is decomposed by a ferment. The ferment is invariably a living organism. This is now regarded as an established fact. As we observe the products of fermentation to increase, we observe a corresponding growth in the organism. The two processes proceed in parallel lines. The same phenomena are observed in the changes that take place in the higher plants. In the sugar cane, maize, maple, pulpy fruits, etc., sugar subserves the purpose of nutrition at certain periods of the growth of the plant. In the early part of its growth, sugar is readily detected in the crude sap; but at the flowering period it disappears, a fact to be explained only on the supposition that it is converted into some isomeric body, or that it was used in nutrition, the latter more probably.*

Prof. Tyndall has shown that a fluid capable of undergoing fermentation or putrefaction, after having been properly prepared and carefully excluded from contact with dust-laden air, will continue unchanged indefinitely at the temperature at which it would decompose if exposed to the air. He believes that it would never decom-

^{*}This fact would seem to indicate that the pabulum of plants is really organic matter, and not inorganic as generally supposed. The same is the case with the growth of a plant during the stage of germination. The inorganic substances conveyed to the leaves are there decomposed and formed into organic bodies which then become the food of the plant. The leaf is an artopoietic organ.

pose. On the other hand, it is certainly true that the fluid will ferment or putrefy if it shall be subsequently exposed to the air. Having demonstrated by experiment that pure oxygen, though aided by the necessary degree of heat, will not excite these processes, he concludes that these changes in organic substances are to be solely ascribed to the agency of the organisms whose presence in the fluid, in large numbers, is revealed by the microscope. This conclusion was corroborated by numerous experiments variously and carefully repeated. It was found that neither fermentation nor putrefaction take place without their agency. Hence he says very confidently that "It is these organisms, and other analogous, though apparently motionless ones, which, by decomposing the milk, render it sour or putrid. They are the lactic and putrid ferments, as the yeast-plant is the alcoholic ferment of sugar. But milk may become putrid without becoming sour. Examine such milk microscopically, and you will find it swarming with the shorter organisms sometimes associated with vibrios, sometimes alone, and often manifesting a wonderful alacrity of motion. Keep these organisms and their germs out of your milk, and it will never putrefy. Expose a mutton chop to the air, and keep it moist; in summer weather it soon stinks. Place a drop of the juice of the fætid chop under a powerful microscope; it is seen swarming with organisms resembling those in the putrid milk. These organisms, which receive the common name of bacteria, are the agents of all putrefaction. Keep them and their germs from your meat, and it will remain forever sweet."*

Prof. Tyndall, it would seem, believes that organic substances will not undergo decomposition except through the agency of living organisms. Whether this is true in all cases and under all circumstances when the necessary conditions are present, as in internal abscess, or senile gangrene, the professor does not state; but his language implies as much. As he is somewhat favorable to the theory of Evolution, though denying its fundamental thesis—spontaneous generation—the statement is accepted as true, that the agency of living organisms or their germs, is necessary to the decomposition of organic sub-

^{*}A discourse delivered before the Glasgow Science Lecture Association, October 19, 1876.

stances; and the fact is here employed as an argumentum ad hominem, without expressing any opinion as to the universality of its truth.—St. Louis Med. & Surg. Jour.

Carbolic Acid.

[The following quite interesting remarks, in regard to carbolic acid, we clip from a lecture in the *Lancet*, of June 29, by Peter Eade, M. D., F. R. C. P.—EDITOR MED-

ICAL NEWS.

Carbolic acid is an antiseptic. It prevents putrefaction, or the destruction and resolution of organized animal tissue into its chemical elements. But how does it do this? or, rather, in what does this process of change consist? For a full demonstration of the potential causes of putrefaction I can not do better than refer you to the able addresses of Dr. Roberts, of Manchester, and Professor Lister, of King's College, published last year in the medical journals, in which it is pretty conclusively shown that the active agent in such decomposition or putrefac-· tion is a microscopic vegetable body called "bacterium." And although Dr. Richardson has expressed the opinion that the cause of septic or putrefactive change is a chemical or glandular rather than such a vital agent, yet I think the present state of our knowledge justifies me in telling you that a living and self-reproducing agent is the constant accompaniment and potential cause of such a change.

Not very much is known about the life-history of bacteria. They are vegetable organisms which under moderate powers of the microscope appear as minute lines, but under higher powers are seen to be rod-like bodies showing a sort of jointing from imperfect transverse divisions, and having usually a slight vacillating movement. They have been found not only in decaying animal tissues, but in milk, in the blood, in urine, and in other animal substances. Ehrenberg and others considered them to be animalcular, but they are now generally believed to be

of a vegetable nature, either algoid or fungoid.

Now, putrefactive or septic action consisting in a destructive change brought about by the life and multiplication of these little vegetable germs, antiseptic action is the influence exerted by substances in preventing such

life and development—in either destroying this life or its living power of multiplying at the expense of the material which furnishes its pabulum. Such a property has been found to exist (among others) in carbolic acid, and, because of its special suitability, this agent is the one now generally employed for this purpose in surgical diseases and operations. It may be used in various ways. It is too acrid, almost too much of a caustic, to be used in its undiluted form except in the smallest quantities; but dissolved in water, oil, or glycerin, it may be used of almost any strength that may be thought desirable. The weakest form of lotion commonly employed contains about one part of acid to eighty or a hundred parts of water; and from this dilute solution it may be used for ordinary purposes of any strength up to that of the glycerinum acidi carbolici of the London Pharmacopæia, which contains one part of carbolic acid to four parts of glycerin. For local use in limited quantity, however, it may be used of much greater strength even than this; and I am in the habit (as you have seen) of applying with marked advantage a glycerin solution of the acid to the granular and excoriated os and cervix uteri, of the strength of four parts of the acid to one part of the glycerin.

The efficacy of the acid in checking diseased or septic action appears to depend upon its being brought into absolute contact with the part to be acted on, and it would seem to exert no beneficial effect beyond the exact limit of the part so touched. The explanation of this is very easy when we remember that its action is the destruction of the life of the germs living and flourishing in and upon the diseased part, and probably also—in the case of a suppurating surface—some check to the exuberant growth and development of the rapidly-secreted mucus and pus and altered epithelial cells, which have unquestionably a certain amount of inherent independent life and vitality.

But besides its destructive influence upon the vitality of the bacterium, carbolic acid appears to exercise the same power of destroying other vegetable germs which are the intimate causes of various diseases in or upon the human body. You are aware that a large class of diseases of the skin are now known to be due to the parasitic growth in the cutaneous tissues of different fungoid germs, and in many of these carbolic acid has been found to be of signal service.

The diseases in which I have found the carbolic acid especially useful are: 1. All that class of local festering, pustulating diseases of the skin which are at once so common and so difficult to cure. They include all kinds of pustules, boils, and carbuncles; sycosis, pustular acne, and festering ringworm. 2. Such strumous sores (especially of the neck) as come under the care of the physician.

3. Excoriations of the os and canal of the cervix uteri.

4. Pthisis in its second and third stages, and cases of chronic bronchitis accompanied with more or less puru-

lent expectoration.

I have said that in order to be effective the carbolic acid must be brought into contact with the part to be acted on, and I doubt not that in many cases where it has been found ineffective the failure has been due to a neglect to insure this contact. In the pustulating and suppurating diseases of the skin I have mentioned it is never sufficient to apply the solution of the acid, of whatever strength, upon or to the outside of the skin. It must always be introduced into the interior of the sore or pustule itself, and so as to come sufficiently in contact with every part of the diseased surface. Of its efficacy thus applied I have now had a very considerable experience, and so certain am I of its curative powers in these cases that I state with the utmost confidence that all cases of boils and carbuncles in their earlier stages can be absolutely aborted and cured, whilst even in later stages their further increase can be almost surely prevented. For this purpose a very strong glycerin solution should be employed, and it is best conveyed into the interior of the pustule, boil, or suppurating spot, by a new quill pen dipped into the solution, and introduced by a rotatory motion through its apex, where a sufficient aperture will generally be found. In carbuncles, which are necessarily larger, and have often several openings, several such introductions may be necessary, or, at a later period, threads of lint soaked in the fluid, may be passed with a probe well into all the sieve-like openings. Occasionally, as when the mass is large and solid, a watery solution of the acid may be injected with a hypodermic syringe into various parts of the hardened growth. The same plan of treatment is often quite effective in cases of sycosis, pustular acne, and festering ringworm. And it is doubtless so because it destroys germs which, living in the invo-

lutions of the skin, are the essential cause of these various diseases. In the case of acne, and of boils and carbuncles, the essential dependence of these diseases upon vegetable germs has scarcely been demonstrated, but their mode of origin and growth, their whole life-history, and their curability by such local means alone, go far to prove that they, like other skin diseases, are due to the development in the cutaneous textures or glands of parasitic growth. As, however, I have already published in the medical journals several papers on this subject, I will not longer dwell upon it now. Not long ago it was stated that the development of the vaccine vesicle could be prevented by the application of carbolic acid to the vaccinated sore. If this is so, it would seem highly probable that the same kind of destructive influence would be ex erted upon the small-pox eruption if the acid were applied to the pustules before or during the process of their maturation. The process of introducing a little of the strong acid solution into the apex of each pimple would be tedious and disagreeable, but, if effective, it might not only save much disfigurement, but possibly even life itself. Darkening of the patient's room, blackening of the face, covering up the pimples with wet clay (as practiced by some savage tribes)-all expedients for preventing the free development of the local disease-appear to diminish its virulence somewhat, and possibly this more direct interference with the special virus might do much more to mitigate its severity. Various applications to the general surface have been tried and failed more or less completely, and Velpeau has advised the cauterization of the individual pimples with solid nitrate of silver; but I am not aware that carbolic acid has ever been fairly thus tried, and I recommend it to your consideration when cases of this dire disease come under your notice.

Origin of Glycogen and Destination of Sugar.

In a paper on Glycogen and Sugar, published in the Glasgow Medical Journal for April, Dr. McKendrick says: Glycogen has been found in the placenta, testes, brain, white blood-corpuscles, muscles, and in great abundance in the tissues of the embryo at an early stage. On the other hand, sugar has been found in the blood. Probably

owing to the difficulties in the way of a quantitative estimation of the sugar in the blood, considerable difference of opinion has prevailed among physiologists regarding this point. On the other hand, Pavy has stated that the blood of the hepatic vein contains no more sugar than that of the portal vein; nor will he admit the assertion of Bernard, that there is less sugar in venous than in arterial blood. Whilst, then, Bernard's facts are disputed by so able and accurate an observer as Pavy, the matter must still be regarded as sub judice, and demanding fresh

investigation.

Experimental physiology has enabled us to approach the subject from a different direction. If a solution of grape-sugar be repeatedly injected—in small quantities at a time—into the blood of an animal, no sugar makes its appearance in the urine—that is to say, sugar disappears in the body. Such a destruction of sugar probably takes place in the blood, lungs, and muscles. It is well known that blood containing sugar becomes acid, and that sugar gradually disappears as the acidity becomes more marked. From the fact that the quantity of sugar in the blood of the left heart is not much, if at all, less than that in the right heart, it is not likely that much sugar disappears in the lungs. As regards muscle, it has been shown that the blood returning from a muscle contains less sugar than the blood going to it. When muscles work they become acid from the formation of sarcolactic acid. The question, then, arises as to the origin of this acid. Is it obtained from any of the albuminous constituents of the muscle, or from sugar? No chemical method is known by which lactic acid can be made from albuminoids; but it may be readily procured by the action of a ferment on grape-sugar. It has also been ascertained that muscles rendered acid by over-work speedily change grape-sugar into lactic acid when plunged into a solution of sugar. The inference, therefore, is that there exists in living tissue some kind of ferment which converts sugar into lactic acid.

There is, however, a stage still further back which is of some importance. Claude Bernard's theory is that the conversion of glycogen into sugar occurs chiefly in the liver, and that the sugar is washed away by the blood of the portal vein almost as quickly as it is formed. But, as already stated, the quantity of sugar in the blood of the

vein is small. On the other hand, we find glycogen in the tissues, and more especially in muscle. It is possible, therefore, that glycogen may be converted into sugar in

other places and tissues than in the liver.

I have frequently succeeded in obtaining glycerin extracts of liver which convert starch into sugar. In like manner I have prepared glycerin extracts of the tissue of lung, brain, spleen, and muscle, which sometimes had the same effect. Glycerin extract of muscle rarely fails. With the view of working out this subject more fully I am preparing at present similar extracts of many other tissues, and the result will be recorded in another paper. Meantime there is sufficient evidence to show that a ferment, having the power of changing starch into sugar, exists in other organs besides in the liver.—London Med. Record, May 15, 1878.

Giant-Cells in Tubercle.

THE nature of giant-cells in tubercle is a subject on which there is much difference of opinion among pathologists. Some have ascribed to them an especial importance in the formation of tubercle; others have regarded them as accidental productions; but few now deny their pretty constant occurrence. M. Cornil has recently brought before the Societe de Biologie a communication designed to show that they are formed in the interior of obliterated vessels. He showed specimens from a tubercular infiltration of the pericardium, prepared by hardening with osmic acid and alcohol, and staining sections with picrocarminate of ammonia. From sections thus prepared he succeeded in isolating a large number of free giant-cells, consisting of masses of granular protoplasm of various shapes, with numerous prolongations. some of which were bifurcated, and containing many nuclei. These nuclei were always ovoid or budding, showing an active process of growth. They usually occupied the more peripheral part of the cell, and varied from two or three to twenty or thirty, or more, in number. M. Cornil believes that he was able to trace the process of growth of the cells in these and many other preparations of tubercle of serous membranes, and he describes it as consisting in a special inflammation of a

limited part of a vessel, with coagulation of the fibrin, the accumulation of leucocytes in the clot, an active process of growth, and multiplication of these and of the endothelial cells, softening of the walls of the vessel, which, by infiltration with cells, become indistinguishable

from the surrounding tissue.

In opposition to this view M. Malassez brought forward evidence to show that the true giant-cells of tubercle are not due to obliteration of vessels. He objected to the views of M. Cornil, that the number of giant-cells was often enormous, that they presented prolongations which could not arise in a vessel, that they were often much larger than the vessels in the part, and that they contrasted with obliterated vessels in the fact that their protoplasm was actively growing, not mere altered coagulum, and that they lacked all trace of a muscular wall. He himself urged that many of them were cells which should form vessels, but failed to do so, corresponding to the "angioplastic" or vaso-formative cells of new growth. This view has before been advocated by Brodowski, and adopted by Professor Charcot. But M. Malassez holds that other methods of formation may also be observed. There can, we think, be little doubt that such is the case; that many of the so-called giant-cells are also found, and that these may be formed either by angioplastic cords or by accumulation of actively growing, but not yet differentiated protoplasm, derived usually from endothelial cells .- Lancet.

Puerperal Insanity.

THE following statistics and observations are quoted from a recent work by Dr. Ripping, in a review published

in the Irrenfreund (1878, No. 2).

Of 780 female patients admitted into the asylum at Siegburg during the four years 1872-5, 168 suffered from puerperal psychoses in the widest sense of the term, i. e., including the insanity of pregnancy and of lactation. This gives a percentage of 21.6, whereas that observed in eight other asylums varies between 7 and 16.8. The author attributes this fact partly to the greater frequency with which these patients are now taken to asylums instead of being treated at home, partly to the increasing

accuracy of statistics, and partly to the faulty physical development of the women, especially those belonging to the manufacturing classes in the neighborhood of Dusseldorf.

The 168 cases are divided as follows:

In accordance with previous observations melancholia was found to be the most frequent form of the insanity at its commencement; it occurred in 63.6 per cent. of all the cases; mania in 34.5. During the period of pregnancy melancholia was still more common; it occurred in 84.4 per cent. of the cases; this form of psychosis was also seen in 68 per cent. of the cases of insanity due to lactation.

The author describes a number of cases in which two forms of insanity were combined, or rather followed one another; these he divides into four groups. 1. Melancholia followed by mania; twelve cases were observed; the two forms of psychosis were quite distinct, and lasted each about the same time. 2. Melancholia followed by delusional insanity (Wahnsinn); the latter does not succeed the former as a secondary form of insanity, but as a separate and independent affection. 3. Mania followed by delusional insanity, in which the delusions of persecutions, etc., at first occasionally observed during the maniacal excitement, gradually get the upper hand, and under the influence of hallucination become permanent. 4. Mania with subsequent melancholia; this is simply the reverse of the first group.

The author quotes his statistics to show that the proportion of cases with hereditary predisposition differs so slightly from those without it that it can not be considered as having much to do with the causation of insanity in these cases. Patients aged from 30 to 35 seem most prone to melancholia, while younger women are

more frequently attacked by mania.

Prognosis is more favorable in puerperal cases than in all cases of insanity in women taken together; but the author's figures do not show so high a proportion of recoveries as has usually been given. He attributes this to a more strict distinction between cases discharged recovered and those only improved than used to be the

case. Of the patients suffering from mania, 62 per cent, and 33.6 per cent, of those with melancholia, recovered. The combined forms afford the least favorable prognosis; of the cases described above under the second group, not one recovered. Heredity does not appear to exercise any special influence on the prognosis. Figures show that the earlier the patients are brought under treatment the greater is the percentage of recoveries. Subsequent attacks of insanity are always more favorable as regards prognosis than primary ones. The average duration of the attacks in the patients who recovered was—for melancholia ten months, and for mania seven months.

Insanity of Pregnancy.—The author finds that insanity is more common in the latter than in the earlier months of pregnancy; in all the cases observed by him the patient's power of resistance had been diminished by hereditary tendency, previous attacks, disturbances of circulation or of the emotions. Illegitimate pregnancy is a very frequent cause of insanity; hereditary predisposition appears to have much more influence at this time than in the puerperal period or during lactation. The liability to insanity seems to diminish in each successive pregnancy. Of the cases of melancholia under this head, 58.5 per cent. only were pure melancholia, the remainder consisted of the combined forms commencing with melancholia. In subsequent relapses, the form of insanity which existed in the original attack is never repeated. The author confirms the statements of Leidesdorf and Holm as to the prognosis being very unfavorable in the psychoses of pregnancy; it is especially bad (1) when the attack comes on in the earlier months of pregnancy, (2) when there is hereditary predisposition, and (3) after thirty years of The percentage of deaths to cases was as high as age. 125.

Insanity of Puerperal Period.—The attack commences within a fortnight after delivery, and usually in the second half of the first week. Hereditary predisposition tends to bring on the attack earlier than would otherwise be the case; 29.2 of the cases occurred after the first labor. The author believes that complication, such as hemorrhage, parametritis, etc., occurring during or after labor, are frequent causes of insanity; also grief at the death of the child. The pure forms of melancholia and mania are much more common at this time than the combined.

Melancholia is most frequent after thirty years of age; also when the attack commences within the first few days after delivery. The percentage of recoveries was-of all cases, 46.3; of the cases of pure melancholia, 40.6; of mania, 54.5. Youth, the early outbreak of the disease after delivery, and timely removal to an asylum, are all favorable elements in the prognosis. The average duration of the attack in cases which recovered was eight months, against nine months in the insanity of pregnancy. The psychoses after abortion were most frequent in the second or third month of pregnancy; they generally occurred after free and persistent hemorrhage in patients who were weakened by frequent pregnancies and enforced rest. The form of insanity and the prognosis are similar to those of the puerperal cases, but the great prevalence of hallucinations of sight, and the occurrence of local muscular spasms in the limbs without loss of consciousness, are noticeable peculiarities. The average duration of the cases which recovered was only five months, owing to the rapid disappearance of the anæmia.

Insanity of Lactation .- This most commonly commences in the second half of the second month after delivery or later, in patients whose powers have been gradually weakened by pregnancy, labor, puerperal troubles, and lactation. A rapid succession of labors, or prolonged rest, with affections of the generative system, predispose strongly to the attacks of insanity. Melancholia is by far the most common form of psychosis at this time. Neither age nor heredity seemed to play any important part in the etiology, but it was noted that the earlier the attacks commenced the more frequently were they in the form of melancholia. The prognosis is not so favorable as under the other heads, but fatal cases are rare. The tendency of the disease to pass into chronic delusional insanity, and the frequency of hallucinations of hearing are very marked. The duration in cases of recovery averaged 9.5 months.-London Medical Record, May 15, 1878.

Acute Brominism.

DR. EASLEY (American Medical Bi-weekly) describes a case of poisoning from the excessive use of bromide of potassium, three ounces having been put in the prescrip-

tion instead of three drachms. The general condition was one of mental and physical languor or weakness; locomotion was impossible. Drowsiness amounted to somnolence. When aroused, the patient had a startled expression of the eyes singularly at variance with her aspect of indifference. Nervous sensibility, especially reflex irritability, was much diminished. Memory was impaired; otherwise the mind, I believe, remained unaffected. The grasp of the hand was very feeble, and the limbs when lifted up and left to themselves immediately fell. There seemed to be a complete illustration of what Mitchell has called muscular anesthesia. If the woman was thoroughly awakened for a few minutes a paroxysm of the epileptiform seizures would occur, when at its close she would again pass into a continual stupor, having no wants, or incompetent to express any. At no time were there hallucinations or delusions.

The special symptons may be summarized thus: 1. The tongue was thickened; slowly and partially protruded by great effort, and covered with a thick, tenacious secretion. 2. The articulation was drawling, difficult and imperfect. When a question was asked, the answer would be intelligent as far as it went, but it would frequently break off in the middle of a sentence. If the patient were again aroused when this occurred and the interrogatory repeated, she probably would reply, as if vexed: "Well, I have told you." 3. The heart pulsations were diminished in force and frequency, the pulse falling as low as 60, and the temperature 80°. Respiration without the stertor of opium poisoning was slow and easy. The breath was not only fetid but nauseous, the nausea peculiar to brominism, and which can not be well described. 4. The pupils were dilated, the lids of the eyes heavy and opened with difficulty. When shaken and desired to do so, patient would make the effort, and the voluntary elevator muscles could be seen to strain before accomplishing their function. 5. Constipation, which is the rule under such circumstances. attended in the present instance. Hammond says diarrhea occurs in rare cases. 6. The kidneys acted freely, and the patient's safety is perhaps due to the rapid elimination of the drug by these organs. The eruption mentioned by some writers was not observed inthis case, and the patient made a good recovery.—Pennsylvania Medical and Surgical Journal.

Hæmophilia: Hemorrhagic Diathesis.

THE last issue of Ziemssen's Cyclopedia, Vol. XVII., con-

tains the following passage:

"That the affection has gained in frequency to an important degree, within a comparatively recent period, can scarcely be doubted. As we have already seen, not a trace of hæmophilia is to be found anywhere in the entire literature of the middle ages and earlier part of modern times, with the exception of the doubtful passage in Alexander Benedictus and Hoechstetter's case, and in none of the bleeder families can the disease be followed back further than the beginning of the last century. To be sure, this silence of writers, during the period referred to, does not necessarily indicate the entire absence of the disease in those times; still, as suggested above, some mention of it might naturally be expected if the affection had been frequently observed. Moreover, in consequence of the great fecundity of bleeder families, and the marked inheritability of the anomaly, there seems to be every likelihood that the affection will become still more common in the future.

"The few bleeders existing two hundred years ago, have probably by this time a considerable number of bleeder descendants, and this number is likely to steadily increase. Certainly thus far the natural restrictions to the propagation of the disease, the premature death of many members of these families, and the failure of others to beget offspring after attaining the proper age, have failed to check the progress of the affection, not to mention the possibility of its spontaneous extinction. It becomes a question, therefore, whether active precautions of both a private and public nature may not, perhaps, be warrantable to prevent the disease ultimately becoming a social calamity."

Clinical Lecture on Bright's Disease Cured by Jaborandi.

Delivered at the Pennsylvania Hospital, by J. M. Da Costa, M. D, Professor of Practice of Medicine in Jefferson Medical School.

A. W., æt. 55, single. Admitted on March 20th. Has never suffered from rheumatism, and has never had any specific disease. Has always been regular in her courses. The patient states, most positively, that she has been per-

fectly well all winter, and that her illness only began one week prior to her admission. She then noticed that being exposed to the vicissitudes of the weather, her feet and then her face began to swell. Finally, a general anasarca came on. She had, at the same time, some loss of appetite, with gastric pain and cough. When she was admitted to the hospital her whole body was greatly swollen, and she was somewhat feverish; the temperature in the mouth being 99 deg. The heart was beating feebly, or rather the sounds of the heart were feeble. She complained of pain and weight in the pit of her stomach, and of considerable dyspnæa. She passed but little urine. There was no heart murmur to be heard, although we made a very careful examination of that organ. The tongue was clear, and the digestive disturbance not much marked.

. What was the cause of the dropsy? A clew was at once afforded us by an examination of the urine, which was found to contain an enormous amount of albumen; the albumen, when precipitated, filling at least one third of the test-tube. The microscope taught us that the urine also contained blood corpuscles, epithelial and hyaline casts and a few oil drops. Most of the casts were,

however, epithelial.

I at once diagnosticated the case as one of acute Bright's disease—Bright's disease complicating acute renal dropsy. All this was self-evident. Only one doubtful point remained to be cleared up. Was, or was there not, prior organic disease of the kidneys? This was at first hard to determine off-hand. We had to wait until the acute attack had passed away under the proper treatment. The presence of casts and blood corpuscles in the urine seemed to answer the question in the affirmative at that time.

To-day we have the best of reasons for concluding that no disease of the kidneys pre-existed. The case has ended in perfect recovery. The abnormal constituents of the urine have almost entirely disappeared. This case has been an extraordinary one, on account of the patient's very rapid recovery.

And now you will, of course, want to know what our treatment has been. How we have brought it about that in the course of two weeks after her admission the patient is entirely recovered. The general dropsy, albumen in

her urine, and dyspnœa all gone together, I ascribe all my success in the treatment of this case to the free use of jaborandi. Five days after the jaborandi treatment was begun the whole face of the case was changed. The dose I ordered was one drachm of the fluid extract of jaborandi thrice daily. This dose produced excessive diuresis and diaphoresis. I am convinced that in jaborandi we possess a most valuable agent for combating the dropsical complications of Bright's disease. It should be given either in the form of the infusion, or the fluid extract. In cases where uræmic poisoning is a factor, and where the drug is consequently not well borne by the stomach, I have administered jaborandi by injecting it into the bowel. Though the effects of the drug when injected were not so striking as in the present case, I yet see no reason why it should not be given by the bowel as well as by the mouth. I have also tried the drug hypodermically, but I prefer not to speak positively at present of its effects when so used. In one instance I will say that it did produce considerable irritation of the skin.

How are we treating this woman, now that the dropsy has all gone? She is taking dialyzed iron internally and hypodermically. This treatment is improving vastly her

general health and nutrition.

The origin of the disease in the present case is a very common one. It was brought on by cold and exposure. In children, acute Bright's disease generally follows scarlet fever. In adults it usually comes on immediately after exposure to dampness and vicissitudes of weather.—

New York Hospital Gazette.

Guaiacum in Sore Throat.

Dr. Frikzinger, in the Philadelphia Reporter, commends guaiacum in all forms of sore throat. He says:

By contact guaiacum has the quality of causing the viscid secretions to become more consistent, and thus facilitate their removal, either by expulsive efforts of the patient or by gargles. Although this primary action locally is most unquestionably highly beneficial, it is owing to its secondary physiological effect upon the engorged capillaries, ramifying in the body of the gland, that the resolution is immediately accomplished. It is

unquestionably owing to these peculiar properties of coagulative astringency locally, and the tonic action upon the walls of the over-distended capillaries, giving them force to expel the superabundant blood they contain, that gives guaiacum its specific virtues in curing quinsy.

As there is thirst and fever, and dryness and burning of the throat, the addition of niter and potas chlor will meet the indications, and will modify the formula so as to be more agreeable for the patient. The following is a combination that has been used quite extensively for several years, and will be found as agreeable to take as any:

R. Potass. chlor., 3 j; Spts. æth. nit., 3 iv; Tr. guaiac., 3 vj; Syr. aurant. cort., 3 vj.

Sig. A teaspoonful every two hours, in water.

This should be taken in about a teaspoonful of water, or a sufficient quantity to allow the warming and constringent effect of the guaiac to be felt in the act of swallowing, and it is desirable that this should be done slowly. In case the bowels should move too freely the dose should be diminished, and as the disease ameliorates it should be administered at longer intervals.

If there is permanent enlargement, of not too long standing, the application of a solution of tannin in tincture of iodine and glycerin, applied to the gland, with a course of guaiacum internally, will prove of good service.

New Remedies.

THYMOL.—Thymol, a homologue of phenol, and extracted from the essential oil of thyme, of the American horseradish, and of the Ptychotis ajowan, has been used as an antiseptic by German surgeons for more than two years, and is now being introduced into America. Discovered in 1709 by Caspar Neumann, it was first used to deodorize unhealthy wounds in 1868 by Bouillon and Baquet, of Lille. Under certain circumstances its antiseptic qualities are said to be from four to twenty-five times as powerful as those of carbolic acid. Thymol is crystalline, nearly colorless, has a pleasant odor and an aromatic, burning taste; it dissolves in twelve hundred parts of water, one

part of rectified spirit, and one hundred and twenty parts of glycerin. Its action as a poison is only one-tenth that of carbolic acid, and it does not irritate the skin. These qualities, together with its great antiseptic power, indicate its substitution for carbolic acid in the Lister treatment of wounds. Professor Volkmann, of Halle, has used it in preference, and with great success. It has also been used for various skin diseases by Dr. R. Crocker, of London. For further details see New Remedies for April 16, and Mr. Gerrard's paper in the Pharmaceutical Journal. As an ointment, Crocker uses five to thirty grains of thymol to one ounce of vaseline; as a lotion, thymol, gr. v; spirit, rectif. et glycerm, aa 5 j; aquæ, q. s. ad 3 viij. Since one part of thymol will do as much antiseptic work as twenty five parts of carbolic acid, the former is really the cheaper of the two, although in equal bulk it costs five times as much as the latter.—Boston Medical and Surgical Journal.

Soul-Medicine.—"In allopathy the soul is nowhere; in homeopathy the state of the soul and mind is a sine qua

non.

"Allopathy has no means of affecting the soul or mind, except those of a moral kind; whereas homeopathic medicines act upon the spirit or soul of man, and through it, and by means of it, and with a certainty which is as remarkable as it is true.

"By way of illustrating the power of homeopathic medicines over the mind and its affections, I shall give the following example: A favorite cat of my own had kittens. All were drowned but two; then one was given away, and ultimately the remaining one was given to a friend. The mother of the kittens became inconsolable, and went all over the house mourning her loss in unmistakable tones of grief, for five days and nights, 'making night hideous' with her cries. One globule of Ignatia cured her in a half an hour, as she never cried again."—Skinner's Diseases of Women, p. 27, Porter & Coates, Philadelphia.

THE NUTRITIVE VALUE OF MILK, as calculated from its elements, is very large, and its price is low as compared with meat. According to the Kensington Museum Catalogue, one pound of milk can produce at the maximum .8 ounce of dry muscle or flesh, and, if digested and oxidized in the body, is capable of producing a force equal

to three hundred and ninety tons raised one foot high. One pound of lean beef is reckoned as a force-producer as nine hundred and ninety foot tons. Calculating the dry muscle as moist flesh, twenty-five pounds of milk are equal to four pounds of lean beef in nutritive value, or, in other words, one pound of beef is equal in nutritive value to 2.9 quarts of milk. Now, when milk is 7 cents a quart, it is cheaper than beef at 21 cents a pound. We are led to these remarks by being reminded of the small consumption of milk by an ordinary population. From the best authority it is stated that but two-fifths of a pint a day are used in the asylums, schools, etc., in England; two-sevenths of a pint a day in one town, Sterling; and but one-fifth of a pint a day in the English towns of Mansfield and Bedford. According to Dr. Edward Smith, the following table represents the consumption in the given place for each adult:

n	England,					٠		32	OZ.	weekly.	
	Scotland,	٠	0		9			125	44	46	
	Wales,			۰		۰		85	44	44	
	Ireland,		٠		٠			135	66	44	
								The	San	itarian.	

MICROSCOPY.

National Microscopic Congress.

A National Microscopic Congress will be held at Indianapolis, commencing August 14, and continuing not more than a week. We believe we made mention of the

fact in a previous number of the MEDICAL NEWS.

The proposed objects of the Congress are an increased personal acquaintance and social intercourse between the workmen in this department of science throughout the country, the reading of scientific papers on subjects pertaining to the microscope and its use, and the consideration of such questions of interest to microscopists as may reasonably be offered by members in attendance.

The Governor and other officers of state, and the Mayor and citizens of Indianapous, have united in offers of hospitality to the Congress. All members, who are willing to accept it, will be entertained at the residence of the citizens without cost, and those who prefer hotel accommodations will be received at the best hotels at greatly reduced rates: Bates House, Grand Hotel, and Occidental Hotel, each \$2 a day; Remy House, \$1.75.

Members are requested to bring to the meeting scientific papers, questions or suggestions; also instruments, objects and accessories, and anything else that will interest and instruct their fellow-workers with the microscope.

Members will please report at the headquarters of the Committee of Arrangements, room 24, Bates Honse.

Those designing to attend are requested to give early notice as to the time of arrival. All communications should be addressed to W. Webster Butterfield, M. D., Secretary of Committee of Arrangements.

Extracts from Report on Histology and Microscopy.

It is an accepted truism that no physician is competent for all the duties of his profession without a practical acquaintance with the microscope and microscopic manipulation; yet it is to be regretted that so few are to be found who are even tolerably expert in such studies. It is not an uncommon thing to find physicians who are well informed in other departments, who imagine that the examination of a pathological specimen may be easily made by a cursory view of a small piece or a drop of the fluid under the microscope, when in reality many hours or days are needed for the preparatory hardening, staining, and mounting, which are requisite for an intelligent judgment. In cases of doubtful pathological structure or diseased function, the only reasonable course left for those who are not sufficiently skilled in manipulation is to refer the examination to others. To facilitate such microscopical examinations, it is often necessary to transmit the specimens by mail. For this purpose, Dr. Richardson, author of the "Handbook of Medical Microscopy," advises the use of acetate of potash. A fluid drachm of sediment containing tube-casts, etc., may be poured in a two-drachm vial containing the solid acetate. The latter will absorb the liquid so that it may be transmitted without leakage. For tumors, etc., a small piece, from one-fourth to one-half an inch square, and one-tenth of an inch thick, should be placed in a couple of drachms

of saturated solution, made by pouring one-half an ounce of rain water upon one ounce of dry granulated acetate of potash. After forty-eight hours' soaking, the piece should be drained and wrapped in several folds of india rubber, or oiled silk. In this way specimens may be sent by mail without risk of either decomposition or desiccation. As the acetate has no effect on oil gobules, this plan enables us to recognize fatty degenerations in cases where specimens in alcohol or glycerin afford negative results. With deposits of acetate of lime or triple phosphates this plan will not answer, and Dr. Richardson advises the addition of twenty or thirty per cent. of carbolic acid to the fluid which contains them. — Pacific Med. and Surg. Journal.

Richmond Diatomaceous Earth.

Microscopists are informed how rich in diatoms the earth is about Richmond, Va. Mr. C. L. Peticolas, of whom we have mentioned before, has for some time been engaged in supplying such as desire with slides of diatoms obtained at Richmond, Petersburg, and neighboring localities, and from all parts of the world. We have quite a number of his Richmond and other slides, and they are certainly very beautiful. They afford the scientists a fine field for study. Slides exhibiting the general deposit and holding some hundreds of diatoms of many species are sold at the low rate of fifty cents each. Slides of special interest are of a higher price.

We have recently received a letter from Mr. Peticolas describing a new "find." We here insert the letter:

In the spring of 1877 my attention was called to an exposure of the Richmond earth made in an excavation for building purposes. I secured a few pounds of the earth, and an examination showed it to be remarkably pure, and free from "orthosira marina," the great abundance of which in other rich parts of the deposit obscures the more interesting forms. Upon washing and mounting this earth I found tolerably abundant in it a new navicula—a sort of mana amphiplura—distinguished by a curious beaded marking on the connecting zone, and a capital test for high power lenses.* This gathering shows also p. maylandicum, biddulphia, concinna, and most of the rarer forms of the Richmond earth; but its distinguishing feature is the great abundance of the two pleurosigmas (angulatum and Virginica) contained in it. This renders it a specially valuable test slide for the comparison of objectives, as, so far as I have observed in thousands of examinations, the striation on the diatoms is perfectly uniform when taken from one locality. The p. angulatum is one of the best known and most generally

used diatoms for test purposes, and any one accustomed to the use of objectives can pronounce very well on the capabilities of almost any power above ½ inch by its performance upon p. angulatum. Taken altogether I consider this new deposit as being the very finest showing of Richmond earth ever yet made.

Beck's 10-inch resolves it into squares, similar to P. Attennatum.

Mr. Peticolas prepares a "probe platte," or test slide, of nineteen diatoms, after the manner of Moller. On it are two or three pleurosigmas, and an angulatum, a s. gemma, arochnodiscus Ehr., nav. lyra, nytzchia, nav. crassinervis. etc.; the latter being the most difficult.

The p. angulata are said to be peculiar in that the striæ on them all are singularly uniform—not differing in their fineness. They are the more valuable, therefore, as tests. We notice that the markings are finer than those

that come from Germany.

Those who have not already procured specimens from Mr. C. L. Peticolas should do so. His address is 635 Eighth Street, North, Richmond, Va.

Contagium Vivum.

No other subject within the scope of sanitary inquiry has excited greater interest during the past year than that which is connected with the investigation of the nature of the contagious material of the infectious fevers. The doctrine of a contagium vivum has been recently assailed with earnestness and vigor by that able and zealous sanitarian, Dr. B. W. Richardson. Nevertheless, that doctrine has been steadily gaining ground, not only in the increasing number of its avowed adherents, but still more in the variety and significance of the analogies by which it is sustained.

It will be remembered that a little more than a year ago Dr. Burdon-Sanderson, who still holds fast to the doctrine of living contagia, seemed to give up the germ theory, in that he denied to contagium the attribute of structure in the anatomical sense, and maintained that, "so far as the morphologist is concerned, germs have quietly gone out of court, and given place to things which are ultra-microscopidal—to molecular aggregates—of which all that we can say is, that they occupy the border-land between the living and non-living things." I have else-

where commented upon the weakness of the argument implied by this statement, as really resting upon no other basis than the limits of microscopic demonstration, and I cited the admission of its author that, "after all, contagium resembles an organism much more than it resembles a chemical body, for its characteristic behavior is such as, if it had structure, would prove it to be living." "What," he asks, "is more characteristic of living protoplasm than that while maintaining its own integrity it alters the sur-

rounding medium?"

Assuming that the matter of contagium is identical with the "germinal matter" of bacteria, Dr. Sanderson endeavors to fortify his position as to the absence of morphological characters, by adverting to the fact that this germinal matter resists destructive influences which are fatal to the adult bacteria. Prof. Tyndall has shown that this argument is utterly without validity. He adverts, in a paper published in the Proceedings of the Royal Society of June 21, 1877, to the well-known fact that the contagium of splenic fever appears under two forms, one of which is fugitive and readily destroyed, the other persistent and destroyed with difficulty. It had been shown by Koch, and also by Cohn, that the fugitive contagium is the fully developed organism of bacillus anthracis, while the persistent contagium is the spore of that organism. So likewise the observations of Dallinger and Drysdale establish a great difference between the death temperatures of adult monads and monad germs. With a magnifying power of 5,000 diameters, these gentlemen demonstrated the production of spores by adult organisms, some of which organisms did not exceed the 1-5000 of an inch. The young spores were watched through to the adult condition, and it was found that, while a temperature of 140° F. was sufficient to cause the death of the adults, the spores were able to grow even after having been heated to 300° F. for ten minutes. "Can it be philosophical," asks Mr. Dallinger, "with the life history of bacteria still unknown, to assume it as a different method of propagation ?"

Then as to the ultra-microscopical minuteness of the contagious particles, Prof. Tyndall argues with pertinency and force that "between the microscopic limit and the true molecular limit, there is room for infinite permutations and combinations," and he invokes the uniformity

of nature to sustain his position that "a particle, whether great or small, which, when sown, produces a plant, is proved thereby to be the germ of that plant," certainly as defensible and rational a position as that of Dr. Sanderson, that a particle, however fruitful it may be, ceases to be a germ and "dwindles to a molecular aggregate"

when it becomes ultra-microscopical.

Dr. Sanderson has, moreover, denied with emphasis that any experiments of Bastian or others have proved the possibility of spontaneous generation, citing his own experiments and those of Samuelson, Pfluger, and Prof. Tyndall in opposition to the inconclusive ones of Dr. Bastian. It was shown by the former gentlemen, as it had been shown several years ago by the late Dr. Jeffries Wyman, that an extension of the time during which the boiling temperature was maintained, or a slight elevation of the temperature above the boiling point, would, in all cases, completely sterilize any organic infusion. More recently Prof. Tyndall has thrown a flood of light on the cause of the diversity of results obtained by different persons, or by the same party at different times in attempts to sterilize organic infusions. I have already alluded to the trustworthy observations of Dallinger and Drysdale on the remarkable difference between adult monads and their demonstrable spores in respect of the power of resisting heat. It occurred to Prof. Tyndall that as doubtless a similar difference existed between the finished organism and the germinal particles in the case of bacteria. so, too, the power of extreme resistance exhibited by the germ would probably be greatly lessened the nearer the germ is to its final sensitive condition. Seeds soften before and during germination, and assuming that this takes place in the germinal particles as preparatory to their development into the mature organisms, Prof. Tyndall determined to apply a crucial test. An infusion infected with the most powerfully resistant germs, but otherwise protected against the floating matters of the air, is gradually raised to its boiling point. Such germs as had reached the soft and plastic state immediately preceding their development into bacteria would thus be destroyed. The infusion is then put aside in a warm room for ten or twelve hours. If for twenty we might have the liquid charged with well developed bacteria. To anticipate this, at the end of ten or twelve hours we raise the infusion a

second time to the boiling temperature, which, as before, will destroy all the germs then approaching their final development. The infusion is again put aside for ten or twelve hours, and the process of heating is repeated. By this method of discontinuous and repeated application of heat we kill the germs in the order of their resistance, and finally kill the last of them, by a temperature no higher than that of boiling water at the ordinary pressure, and maintained for only a few minutes at a time. "No infusion," says Prof. Tyndall, "can withstand this process if it be repeated a sufficient number of times." He applied it to infusions of a great variety of substances, including those most tenacious of life. Not one of them bore the ordeal. These results were clearly foreseen before they were realized, so that the germ-theory fulfils the test of every true theory, that test being the power of prevision.

The attack of Dr. Richardson on the germ theory of disease is far more uncompromising, his views being in direct opposition to the idea of there being a living and self-multiplying contagium. He contends that the poisons of the various communicable diseases are modified secretions, and these, though products of living organs, are not themselves living, but really dead matter, and that different diseases are caused by secretions of different

glands.

These views relative to the glandular origin of contagious diseases were first promulgated in 1867, and, with a single exception relating to his alleged success in isolating the poison of septic matter, which he regards as a type of the contagia of all communicable diseases. I believe that his twenty or more propositions laid down in his recent address as President of the Sanitary Congress at Leamington, have failed to meet with acceptance either on the part of the general medical public, or with special investigators in the same department of pathological inquiry.

Dr. Burdon-Sanderson has shown, by his experiments on the propagation of infective infiammations, that, in cases of putrid intoxication caused by the injection of septic matter from which the septic organisms have been previously separated, if the dose be not so large as to kill the animal in a few hours, there is usually a rapid recovery, the septic poison not having the slightest tendency to multiply in the infected body, provided that the access of microzymes be excluded. This presents a most remarkable contrast with the effects of the introduction of the contagia of the zymotic diseases, and the difference is full of significance. In like manner the observations of Dr. Satterthwaite, in concert with Prof. Edward Curtis, as reported in the paper read by the first-named gentleman before the International Medical Congress in Philadelphia, had reference chiefly to the poisonous matter of putrid infusions, and only showed what Burdon-Sanderson had already established, that this matter, capable of producing intense sepsis, is a chemical and not a living substance. Nevertheless, the latter has established another fact on equally incontestable experimental evidence, namely, that this chemical poison is the product of bacterial activity, and can not be otherwise manufactured. The error of the germ-crazy folks, if error there be, consists according to him, "not in stating that bacteria are of pathological importance, but in asserting that because A produces B, and B produces C, therefore C can not be produced unless A is present. It would be erroneous to say that the yeast plant is the agent in the production of the evils of intemperance, and it is a mistake to say that bacteria are the agents in the production of septicæmia; but just as if there were no yeast plant there would be no drunkenness, so if there were no bacteria there would be no septicæmia.

The septic poison we have seen to be an exclusive product of bacterial development—a product which bacteria are capable of manufacturing from unorganized and perfectly harmless material—a product which, although incapable of passing through certain kinds of filters, is soluble in the ordinary sense. Pathologically, we have seen that it does not act the part of a specific contagium; that, in order to the production of its morbific effects, a sufficient quantity must be introduced into the circulation; and, further, that the intensity of the effect is proportionate to the quantity introduced; so that if the amount be not too great, the tendency is to a favorable, not to a fatal, termination. But every one knows that there occur from time to time in clinical experience instances of a sort of septicæmia of a more virulent kind; cases, for example, of septic peritonitis, in which the quantity of the agent required to produce the fatal result is

not measured by drops or grains, but (if one may so express one's self) in homeopathic doses; cases in which we at once recognize that we have to do, not with a poison of which the effect is determined by its quantity, but with a ferment of which the destructiveness to life is chiefly

dependent on the rapidity of its development.

The inevitably fatal result of these malignant forms of septicæmia preceded by "diffuse suppurative infiltration of the cellular tissue" (pyæmia), surrounding the gateway of access by which the poison was introduced, and by delirium and collapse, "being partly, perhaps, due to the direct influence of the specific contagion, but principally to the enormous development in the organism of the

ordinary septic poison."*

While thus recognizing the fact that in simple septicæmia the microzymes are not the direct agents which produce the pathological results, we may justly enter a protest against the grave error of those who "maintain, in the face of all the experimental investigations relating to the subject during the last few years, that these organisms are without pathological significance." As Dr. Sanderson pertinently and justly remarks, "If these infinitely minute organisms are present in every intensely infective inflammation, we may be quite sure that they stand in important relation to the morbid process." He has further shown that bacteria grown in Pasteur's cultivating liquid, there being no putrid albumenoid matter present, are for the first crop inert, but eventually a product is obtained which possesses all the virulence of putrescent animal or vegetable infusions—a possible explanation being that the liquid becomes charged with the excretions of the bacteria. or with the products of the decomposition of dead bacteria.

Now as to the doctrine of a specific contagium vivum for each of the specific fevers, I think it a sufficient answer to most of the objections urged against this doctrine, to remark that however plausible some of these objections may appear, they are at once refuted by the conceded positive demonstration of such a contagium in a single case, namely, splenic fever. Koch having ascertained that the bacillus anthracis produces spores when grown in the cultivating liquid, proceeded to test the pathogenic

^{*} Burdon-Sanderson, Lectures on the Infective Processes of Disease. British Medical Journal, February 9, 1878.

activity of rods and spores as thus produced. The inoculation of either rods or spores into a small incision in the skin of a mouse produced splenic fever in every instance. If the tested material caused no development of rods and spores in the incubator, it failed to produce splenic fever by inoculation. "Proof," says Dr. Roberts, "could go no further; the infection absolutely followed the specific organism-it came with it, it went with it. These observations were repeated with the strictest precautions at the Physiological Institute at Breslau, under the eyes of Prof. Cohn and other competent observers, who fully corroborated their exactness." The proof is likewise nearly complete in the case of relapsing fever. It is now generally known that the discovery by Dr. Obermeier, of Berlin, of minute spiral organisms in the blood of patients suffering from relapsing fever, has been fully confirmed by later observers. An elaborate monograph on this subject, by Dr. Heydenrich, of St. Petersburg, is quoted by Dr. Roberts in his Address in Medicine before the British Medical Association, in August, 1877. It is based on forty-six cases, which were studied with the most minute care, the blood being examined and the temperature being observed from two to six times each day. Altogether over a thousand examinations of the blood were made. Now the spiral organisms are found during the paroxysms; they disappear at the crisis, and are absent during the apyrexial periods. The fever is easily communicated to a healthy person by inoculation with the blood of a patient suffering from the disease, but the blood is only infective during the paroxysms, when it contains the organisms, but not at the crisis nor during the apvrexial periods, when they are absent. None of the fluids or secretions of the body except the blood are infective, all of which seems to show that the virus is associated with spirilla.

The fact that the organism lives in the blood in this fever furnishes thus a perfectly satisfactory explanation of the absence of local lesions which distinguishes it from the eruptive fevers. It does not so satisfactorily explain another distinctive peculiarity, namely, the lack of a protective influence of a first attack against a recurrence of the disease, although it is urged by Maclagan that it is reasonable to believe that a permanent impression may be more readily produced on a formed and stable organ than on a constantly changing fluid like the blood, and

that a contagion which finds its second factor in an individual organ or tissue is, therefore, more likely to produce a permanent impression than one which finds its

second factor in the circulating fluids.

These facts relating to splenic and relapsing fevers, as furnishing a positive demonstration of the doctrine of contagium vivum in its application to those particular diseases, sweep away the objections urged by Dr. Richardson and others against that doctrine in general, and leave us free to accept general analogies as legitimate data for making a provisional assumption of a similar contagium in the case of other infectious fevers in which disease-producing organisms have not yet been detected.

The theory which ascribes the phenomena of the infectious fevers to the agency of living parasites had floated before men's minds in a vague way for many centuries. It was not, however, until about the middle of the present century that there had been observed a sufficient body of appropriate facts to entitle it to be ranked as a legitimate hypothesis, when Henle, in Germany, Dr. J. K. Mitchell, in Philadelphia, and a Dr. Cowdell, in England, nearly about the same time and quite independently of each other, promulgated very pronounced opinions on the subject, and defended them with an imposing array of striking facts and ingenious and plausible arguments. Liebermeister says of Henle that he elaborated the theory of a contagium vivum in 1853, with as much modesty as thoroughness, though even as early as 1840 he had maintained it with convincing logic.

[CONTINUED.]

Tolles' Objectives.

[TRANSLATED FROM THE "JOURNAL DE MICROGRAPHIE."]

We were astonished for a time at the high prices of the low-power English and American objectives, from four inches to one-third of an inch. We confess we could scarcely comprehend that such low powers should necessitate such costly instruments—that we could but with difficulty admit that one should consecrate from one hundred to two hundred francs in purchasing objectives that one would find for twenty or thirty francs with Hartnack or Zeiss. For a long time we have seen our error; and

we see every day how greatly we were deceived, and in examining recently the large preparations of Ch. Zentmayer with the one-inch and four-tenths of Tolles we have had a new and startling demonstration of our mistake. Of the four-tenth, with correction and of eighty aperture, we have not more to say, but that in rivalry with Beck's (which is a true one-third and therefore gives a larger amplification) it gives a fineness of image incontestably superior, and a penetration still greater than the ffne objective of Mr. Beck into the minute details of the object. But the one-inch of eight lenses of Mr. Tolles veritably astonished us by its totally unexpected qualities. If one examines with one of our best objectives of one of our best makers, a preparation of a certain thickness, one of two things happens-either the objective is of low power and permits the more or less incomplete view of a certain depth of the preparations of which the contours are not sharp nor the illuminations brilliant, or the objective is of large aperture and one sees but a very slight depth of the preparations or plane (if the instrument is good) of which the outlines are sharply shown and the illumination brilliant. To observe the different layers of the object it is necessary to focus, and one sees thus a series of supposed planes, showing perfect images, but spiritless. But with the one-inch of Mr. Tolles we see not a plane, but a picture, with a deep perspective, and with the outlines finely engraved and brilliantly illuminated; that is to say, this is one of the objectives called penetrating; but objectives can only have penetration with a small aperture—this has thirty deg., which is considerable for a real focus of one inch. This superb instrument has not only penetrating power, but it gives a true relief, of which the sight is very sensible-so much so that in examining a nettle leaf of Ch. Zentmayer's preparation in two colors, we see the entire hairs erect, which seem to enter the objective (or tube) sharp in their whole heightwhich one knows is very notable, as they are far from being microscopic-so the effect produced is truly that of a binocular. Behold, then, an object-glass of very wide angle (for thirty deg. is the widest possible angle possessed by any one inch of our acquaintance at least), consequently giving a large, brilliant field-an image of which the details are as visible as is possible with so low a power, of which the contours are of an extreme fineness

and sharpness, and which, with all this, possesses a penetrating power such as to produce the effect of a binocular. It is impossible! one will say. Yes, it is impossible—we know it well; but it is none the less real. And we now see why we have reason for saying that this objective has plunged us into a profound astonishment.

We have on another occasion written that the microscope objectives (and the photographic ones are in the same case) have not only physical qualities, but moral ones. If the physical qualities of the objective in question are excellent, we may say that its moral qualties are exquisite; and we will allow any of our readers who may desire it to judge for themselves.

DR. J. PELLETAN, Editor.

Objectives of C. A. Spencer & Sons.—Our readers should notice the advertisement of these distinguished makers of objectives. It would certainly seem that they had brought the making of objectives to the highest attainable degree of perfection. They claim for them from the $\frac{1}{4}$ an angle of 180° and to resolve any known test.

GLEANINGS.

DISEASES OF THE EAR FROM BATHING.—The ear is far oftener the seat of inflammation and resulting deafness from bathing than is generally supposed. Although its delicate parts occupy a deep situation in the skull, which is usually a protection from objects capable of injuring it, yet in any bathing which includes immersion of the head it is liable to be more or less damaged.

This damage consists in the admission of water to the ear, either through the external auditory canal or the Eustachian tube. When water finds admittance to the former, if cold or salt, inflammation of the meatus alone may result; or if violently injected, as in surf-bathing, or long retained in the canal from diving, the disease may affect the drum-head and middle ear.

Whenever water is forced from the mouth and nostrils into the middle ear through the Eustachian tube, inflammation of the middle ear is almost sure to occur, even though the water be warm. This has been frequently illustrated in a most painful manner by those who have

been induced to use popular nasal douche, inflammation of an acute purulent character having frequently been thus established, which has been dangerous to the life of the patient, and after a tedious recovery left great deafness behind.

Frequent exposures, especially in salt-water bathing, may be the cause of slight earaches, which are usually neglected as unimportant, but which are frequently the

precursors of much deafness.

The fact that several thousand severe cases of aural disease thus result annually in New York City alone should be a serious admonition to all who are concerned, and that three of the sixty-five cases here reported had dangerous cerebral complications should be a further warning.

That bathing is pleasant and healthful is of course admitted, but that it can not be practiced as at present without danger is undeniable. It has been shown by a glance at natural history that amphibia, whose life is passed indifferently in air or water, have naturally the means of protecting their auditory apparatus; but man is not so constructed, and therefore he can not with safety practice diving or submerging the head. He should never dive if

he wishes to preserve his hearing.

When in the surf he should take the water upon his chest or back, closing the mouth and nostrils, being careful not to present the ear to the incoming wave. It is equally dangerous while swimming to receive the dashing water into the mouth or nostrils. A firm pledget of cotton wool in the ears is some protection. Drying the hair and body, and dressing quickly after the bath are, of course, necessary precautions.—Samuel Sexton, M. D., Surgeon-in-Chief to the New York Ear Dispensary; Aural Surgeon to the New York Eye and Ear Infirmary, etc., in the Medical Record, May 4, 1878.

HISTORICAL ITEM.—Most persons regard Homeopathy as a system of modern origin, dating back only to Hahnemann, who brought it into notice about seventy-five years since; Dr. Meryon's History of Medicine furnishes us, however, with the following:—"Gregory I. (surnamed the Great), who filled the papal throne A. D. 590 to 604, and whose name is celebrated in English history from his mission for the conversion of our Islands, affected the most supreme contempt for profane literature, as well as for

the arts and sciences; but curiously enough, it was his fate to help most materially the cause to which he was so vehemently hostile; for although he cared not for science, he endeavored to propagate his faith in Christianity by sending missionaries to all parts of Europe, many of whom, like Theodoric in England, encouraged the study of liter ature and medicine. A most remarkable passage occurs in the writings of Gregory, which is probably the earliest, and certainly the most unequivocal enunciation of one great dogma of the system of Homeopathy, and tends to confirm the notion that that system was practiced at this early period. It runs thus: - 'Mos medicinæ est ut aliquando similia similibus, aliquando contraria contrariis curet. Nam sæpe calida calidis, frigida frigidis, sæpe autem, frigida calidis, calida frigidis sanare consuevit.' The identity of words renders it impossible to read the above paragraph without a suspicion that an old and obsolete tenet may have been reproduced to the world under the garb of a new discovery; but if it be not absolutely true that human nature is destined to renew its acquaintance from time to time with exploded doctrines, just as we renew our acquaintance with by-gone diseases, it is an apt illustration of the proverb advanced by an authority far more unerring than we can pretend to, that 'there is no new thing under the sun."

THE HYPODERMIC INJECTION OF CHLOROFORM.—M. E. Besnier has performed hypodermic injections of chloroform with advantage, and without any unpleasant consequences. Some of his colleagues have not been so fortunate, and have an unfavorable opinion of this method. M. Dujardin-Beaumetz (Journal de Therapeutique, January 25, 1878), though following M. Besnier's instruction in every particular, has often seen superficial sloughing of the shin follow the injection; and when there was no slughing, he has noticed considerable induration, which disappeared The benefit obtained is not very great. very slowly. Doubtless the pain is relieved, but only at the spot where the injection is made. Thus a patient suffering from ticdouloureux in the face is not relieved by an injection of chloroform in the forearm. There are no general sedative effects, even when a drahm of the drug is used. Similar observations have been made by M. Moutard-Martin, who has seen the escher occur at some distance from the points of injection rather than at the site of the puncture itself; by M. Edouard Labbe, who says that the injection causes pain; by Constantin Paul, who has found that the sedative effects do not appear until sometimes two or three hours after injection. It would, therefore, appear that subcutaneous injection of chloroform may be attended with considerable disadvantages, and that it can not be substituted for injection of morphia in ordinary practice. The latter remains the best means of assuaging pain. Doubtless it sometimes produces some trifling constitutional disturbance, but, as it was justly remarked by some members of the Societe de Therapeutique, these undesirable effects may be very much restricted by associating the morphia with atropia.—London Med. Record, March 15, 1878.

.THE COMING DUTIES OF THE ACCOUCHEUR,-Prof. T. G. Thomas says: "The time is not distant when confinement cases will be treated very differently from what they are at the present day. This is a subject of the utmost importance. There is the most urgent need of a radical change in the practice of the majority of the profession, and the time is ripe for the appearance of a stirring and able paper on "The Proper Management of Natural Labor," which will awaken medical men to a sense of their duty in obstetrical cases. The physician should be expected and required to visit his patient from time to time all through her pregnancy, in order to see that every thing is progressing favorably for a successful delivery, and to remore, if possible, any condition (as albuminuria, for instance,) which is likely to interfere with this; and I am fully convinced that it will not be long before the accoucheur who does not pursue this plan will be held culp. able. Again, he will be held equally culpable if he discharge his patient at the ninth day, or at the end of a fortnight, without making a physical examination to ascertain that the parts have sustained no injury from the strain and pressure of parturition, and that the process of restoration to the normal condition is going on satisfactorily.—Maryland Med. Jour.

The Physiological Action of Chlorhydrate of Pilocarpine.—Dr. Demetrius Keriea has made a series of experi ments on chlorhydrate of pilocarpine in M. Constantin Paul's wards. The experiments have demonstrated to him (These de Paris, 31st May, 1877, No. 27) the following facts: 1. Used as a subcutaneous injection, chlorhydrate of pilocarpine, in doses of two centigrammes (0, 3 grain) and upwards, produces the same physiological effects as jaborandi, of which it is the alkaloid. 2. In much smaller doses, pilocarpine acts also by only inducing diaphoresis, which in certain cases has been replaced by diarrhœa. So soon as doses of from one to two centigrammes are attained, salivation always comes on, but below that dose it is generally absent, and perspiration alone occurs even with doses of two and a half milligrammes (0.04 grain) of chlorhydrate of pilocarpine. Dr. Keriea likewise calls attention, in addition to his own experiments, to those already on pilocarpine by Sidney Ringer, Curschmann, Weber, Bardenhewer, Rosenkrantz, and Scotti.—London Med. Record, March 15, 1878.

FLOATING SPLEENS .- F. C. Shattuck, M. D., of Boston, read a paper, which was entitled "Floating Spleens." The paper was based on a case which had come under the care of the writer. The literature of the subject shows fifty-one cases. The first recorded case was in 1581. The two chief factors in the causation of dislocation of the spleen are mechanical elongation of the ligaments by the traction of an enlarged organ, and undue congenital laxity or delicacy of, the ligaments. Only eight out of fifty-one cases occurred in males. The possible influence of pregnancy is suggested by the fact that the lesion occurs most frequently in females. Rupture of the gastro-splenic ligament is a fortunate thing for the patient, the traction on the fundus of the stomach having been known to result in gangrene of the gastric wall, and death. The diagnosis, prognosis, and treatment of the lesion were referred to. The question of treatment was considered from four points of view: according as it might seem desirable to do nothing; to attempt permanent reduction of the dislocated organ; to aim at alleviation or possible cure by reducing the size; or to exercise the organ.

TREATMENT OF AMENORRHEA.—Professor Courty employs (Union Med., Feb. 19) a pill composed of powdered rue, savin, and ergot, of each five centigrammes, and aloes from 2-5 centigrammes. Of these thirty are ordered, and three are taken the first day, six the second dry, and nine the third day, always in three doses. They are suited for

cases of idiopathic amenorrhoa, without great reaction on the economy, and when there is reason to suppose that the suppression of the menses is due either to an insufficient determination toward the genital organs or to a difficulty of discharge due to inertia of the uterus. In order to encourage the fluxion toward the genital organs, Dr. Courty orders, before beginning the pills, foot baths, sitz baths, and fumigations. He also applies leeches to the labia during the three days the pills are being taken. The pills generally induce colicky pains and often a little diarrhoa.—Practitioner, May, 1878.

TREATMENT OF HICCOUGH.—Dr. Favier reports a case of very obstinate hiccough that had lasted without interruption for fifty days, and was finally cured by compression of the epigastrium. The patient had been treated by blisters and sprinkling of the denuded cutis with morphine by punctiform cauterization of the epigastrium with the hot iron, by injections of morphine, by ether, bromide of potassium, chloral, etc., all of which proved utterly useless. Finally, Dr. Favier determined to try the effect of forcible compression of the epigastrium by means of J. L. Petit's tourniquet. Five minutes after the instrument was applied the hiccough had ceased. It reappeared at first whenever the compression was suspended, but finally disappeared entirely. The doctor adds, that as he had no electric apparatus he was unable to try the effect of faradization of the phrenic nerves.

USTILAGO MAIADOS A SUBSTITUTE FOR ERGOT.—The smut of maize is attracting considerable attention as a substitute for ergot. It is quite probable that it possesses other qualities in addition to those specific ones attributed to ergot, and that it may be found useful in other cases than those to which the rye fungus is applicable. Some extraordinary illustrations of its action on the impregnated uterus of inferior animals have lately been communicated to us. For instance, a herd of brood mares, some thirty or more, in the southern portion of the State, was pastured on a field of Indian corn, after the harvesting of the crop. All, or nearly all, dropped their colts. There was known to be a considerable amount of rust on the corn. A similar case is reported from Amador County. The action of the fungus (ustilago maiados), on the human system is under investigation.

THE NORMAL INEQUALITY OF LOWER LIMBS.—Probably the first trial for malpraxis, that ever hinged on this fact in nature, transpired recently in Perry County, Pennsylvania. Suit had been brought because of a shortened femur, after treatment, of five-eighths of an inch. The defendant's witneses testified that a want of symmetry in legs frequently existed where there had been neither fracture nor injury. The cause was nonsuited without delay, and the imperiled surgeon went free. Drs. Agnew and Hunt, of Philadelphia, testified that they had measured many limbs and had found them unequal, without previous fracture; the brother of the plaintiff, whom they chanced to measure, had a normal difference of three-eighths of an inch. This trial is destined to become widely known, and to materially influence the history of this class of suits for malpractice. The researches of Dr. Jarvis S. Wight, of this city, will be long remembered in this connection.

The Diagnosis of Pregnancy.—Dr. Goodell calls attention to the following sign of pregnancy: "When the neck of the uterus appears to you as hard as the end of your nose, pregnancy should not exist; but if it appears to you as soft as your lip, the uterus most probably contains a feutus."—Hospital Gazette.

BOOK NOTICES.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume II. For the year 1877. 8vo. Pp. 697. Boston: Houghton, Osgood & Co. 1878.

There is no gynecologist in the United States in whose library this book ought not to be found. It consists of the Minutes, which occupy not more than ten pages of the second annual meeting of the American Gynecological Society, which was held at Boston, May 30, 31, and June 1, 1877, and the papers which were read at the meeting.

The papers read, and which are contained in this work, are by such eminent gynecologists as Fordyce Barker, Jas. R. Chadwick, John Byrne, Wm. Goodell, Robt. Battey, Theophilus Parvin, Prof. Otto Spiegelberg, A. J. C. Skene, Thos. Addis Emmet, Washington L. Atlee, Thad. A. Reamy, Paul F. Munde, and quite a number of others.

What makes a work of the kind especially valuable is that the papers composing it have received the authors' most profound and careful study. Each subject by its writer has been well considered by him, and to the knowledge which is the result of his own observation, experience, and thinking is added that which is gained by his researches throughout all that has been written upon it by others.

The topics of some of the papers are, "The Functions of the Anal Sphincters," so-called; "Amputation and Excision of the Cervix Uteri: Their Indications and Methods;" "The Pathology and Treatment of Puerperal Eclampsia;" "Report on the Corpus Luteum," with twelve chromo-lithographic plates; "The Present Status of the Intra Uterine Stem in the Treatment of Flexions of the Uterus;" "A Case of Ovariotomy, followed by Fatal Tetanus;" "Sarcorma of the Ovaries," etc., etc.

The work makes a beautiful volume, printed on fine tinted paper with excellent type, bound in red cloth, gilt on the top. The mechanical execution is superb. The

colored plates are very accurate and handsome.

PRICED AND ILLUSTRATED CATALOGUE OF OPTICAL INSTRUMENTS.
Made, and imported, and sold, wholesale and retail, by
Jas. W. Queen & Co. Philadelphia. 8vo. Pp. 144. 1878.
This thick pamphlet having been sent us by the house
of Queen & Co., we feel under obligations to give it a

notice.

Under the head of a "Notice," in the first part of the book, we are given a history of the house, and are told how that from small beginnings it has gotten to be (in the opinion of the firm) "the largest and most comprehensive establishment in the world." Their storehouse is a deep and narrow one. Whether in this fact is set forth their policy by which they have attained to largeness and comprehensiveness, as a firm, is not stated. The man who has traded with them, who has passed through their hands, is left to conclude for himself whether narrowness and deepness (shrewdness) are not a feature in their mode of doing business, and been factors in making them a bloated house.

They state that "our [their] microscopical department, from the year 1870 until recently, was not under as good management as the importance of that branch of the optical science demanded." In their catalogue of a year ago they state that they had had an employe who had

been an obstacle in the way of the prosperity of their microscopical department, whom they had discharged. Now, still alleging that that microscopical department is just only commenced to be managed as it ought to be, it seems to us that purchasers will begin to think that, before making purchases of microscopes, objectives, etc., they had better wait awhile, or until they have been assured that it has been for some time properly conducted. To permit a main branch of a business to be unjointed for a period of nearly nine years, as it is admitted by Queen & Co. from year to year in their catalogues and circulars, tends to cause the inference that there is a looseness throughout. We hope, however, it may not be the case.

On page 74 there is advertised and commended Beck's Economic Microscope, illustrated by a wood-cut. It is not mentioned, however, that the instrument is constructed by the Becks, and that it belongs to their cheap series. On page 92, after advertising Beck's Best Microscope, it is stated, "The lower grades of microscopes which are made by R. & J. Beck are so far inferior, both in their optical and mechanical parts, to those of other makers, that we have declined to keep them in stock." (Ital. ours.) How is this to be explained? Until recently Queen & Co. were the sole agents of the Becks in this country, and more than half of their catalogues were filled with descriptions and laudations of Beck's instruments, high and low grades. Now the Becks have a branch house of their own, and the Queens disparage their work. It would seem that they recommend to purchasers or not, according as scientific apparatus may or may not be profitable to them.

But we have not further space to give in review of this pamphlet of Queen & Co. There are quite a number of items we would like to notice, but we must defer them to

another time.

Fowne's Manual of Chemistry, Theoretical and Practical, Revised and corrected by Henry Watts, B. A., F. R. S. A new American from the twelfth English edition. Edited by Robert Bridges, M. D., of the Phil. College of Pharmacy. With 117 illustrations. 12mo. Pp. 1027. Philadelphia: Henry C. Lea. Cincinnati: R. Clarke & Co. This work on chemistry has been a long time before the public. While numerous other works that have made

their appearance, and after having had more or less popularity for awhile have disappeared, this one has continued to maintain its position as a class-book in undiminished favor. It is now nearly, or altogether, thirty-five years since the publication of the first edition, and yet no other work has succeeded in displacing it. Certainly there has not been a text-book in any branch of science that has had such a fortune, however excellent it may have seemed to be. In these times of rapid progress and change a book succeeds well that can maintain its hold upon public favor four or five years. A professor of chemistry recently accounted to us for its long continued prosperity, its accuracy in all its formulas and statements.

The present edition has been very considerably increased in size, and the work brought fully up to the present advanced state of chemistry. It will be more than ever

valuable to the student of chemistry.

CORRESPONDENCE.

Eucalyptus Globulus.

PROF. THACKER, M. D.:

Dear Sir—As considerable interest, at the present time, exists regarding the Eucalyptus Globulus as a malaria-destroying tree, whilst growing, and also in the therapeutical action of the peculiar medicinal agents extracted from its leaves, no doubt a few remarks on the extraordinarily proved virtues of this tree and power as a medicament in the country of its habitat may prove interesting.

Australia is a land of paradoxes; its flora and fauna are peculiar to itself, and totally different and distinct to those of other portions of the globe. Many of its woods and herbs are admirably adapted for the successful treatment of numerous diseases incidental to the country. The Eucalypti embrace a large family of trees and shrubs only found in Australia. Each and every one are valuable in medicine and commerce. But of all the numerous family of Eucalypti, the Eucalyptus Globulus (or Blue Gum) stands pre-eminent for its health-giving properties. This now-ascertained most valuable tree was for years

treated only as common lumber, being principally used for firewood, fencing and building purposes; until accident placed it among the "materia medica," where it now stands unrivaled for the treatment of some of the dire and pain-

ful diseases incident to humanity.

Some few years ago, when educated medical men in the interior of Australia were "raræ aves," few and far between, the original settlers—shepherds, etc.—when suffering from disease were, in many instances, compelled to prescribe for themselves and treat their own and each other's maladies with indigenous productions a bountiful Creator bestowed. Being in many instances far removed from the centers of civilization and large towns, receiving their supplies only once in two or three years, necessity knew no laws; so the therapeutical powers of many of the indigenous arborescent growths were resorted to, thoroughly tested, and in many instances with a most successful issue.

The Eucalyptus Globulus, or Globosus, in common with the Eucalypti family, sheds its bark annually, but not its leaves. The bark is rich in tannin and tannate matter. It is an evergreen. All the natural Australian trees and shrubs are evergreens. Some of the Eucalypti family attain a vast size; in height, girth and available timber outrivaling the famed trees of California. The Eucalyptus Globulus is a very quick grower when once fairly rooted. It is best grown from seed planted where the tree is to remain. The young trees, with difficulty, bear removal and replanting. Tracts of country, that were once uninhabitable on account of their swampiness and malaria exuding therefrom, are now rendered perfectly healthful and habitable by planting the Eucalyptus Globulus, which has the marvelous power of absorbing and utilizing malarious vapors in the elaboration of its growth; also of rendering inert pestiferous emanations by its aromatic and putrefying exhalations. In swampy land the tree thrives best, but is not over-particular about locality, enduring the torrid heats of summer, with their desiccating and prostrating hot winds; also the frosts of winter with indifference.

The preparations of the Eucalyptus Globulus I have successfully used in my extensive practice, have been the oleo-resinous product obtained by distillation from the leaves, also the aqueous infusion and decoction of

the leaves, together with the alcoholic extract of the

leaves and fine twigs.

Acute and chronic rheumatism I have most successfully treated by acupuncture and rubbing in the distillate, augmenting the therapeutical action by internal administration. Dysentery I have effectually cured, after all other known remedies had failed, by administering the aqueous infusion and decoction, assisting the action by halfgrain doses of hydrarg, chlorid. Bronchitis, which has been very prevalent recently, has yielded to the distillate applied externally over the thoracic region, combined with internal administration. When other treatment has proved unsuccessful, facial neuralgia and all neuralgic affections have been speedily relieved by the application of the distillate externally and internally. In infantile croup and dipthentic affections, the application of the distillate has proved most successful, swabbing the fauces with a strong decoction; also by means of a spray apparatus. In severe cuts and bruises, burns and scalds, the distillate speedily gives relief from pain, acting as a strong sedative; also as a powerful hemostatic. In painful hemorrhoids, when the patient has objected to excision, the distillate has speedily reduced the inflammation, arrested the hemorrhage and given freedom from pain. In toothache many cases have come under my knowledge where the application of the distillate has given immediate and permanent relief. In many similar cases, arising from neural disturbances and affections, the administration of the different preparations has proved most salutary. In lacteal inflammation of the mamma the external application of the distillate has in many cases been most beneficial; its penetrative aromatic powers resolving and dispersing the tumefied glandulæ. In mammary abscess its sedative and antiseptic qualities fit it most admirably as an application. The leaves of the Eucalyptus Globulus (Blue Gum) banish fleas and similar vermin.

In the intertropical portion of Australia, where ague and malarious fevers abound, the different preparations of the Eucalyptus Globulus have proved most successful in successfully treating those scourges to humanity. The inhabitants of those districts term the Eucalyptus Globulus the

"Sainted Tree."

At some future time I will forward you further notices of some of the indigenous medicinal agents in this, the

newest and latest, but, by no means, the least important addition to the civilized portion of the habitable globe.

HENRY M. MARSHALL, M. D.

GUNDAGAI, NEW SOUTH WALES, June 19, 1878.

P. S.—I shall be happy to obtain and forward pure seeds of the Eucalyptus Globulus, to any one requiring such; also to give all information in my power for the benefit of science.

H. M. M.

EDITORIAL.

LONGVIEW LUNATIC ASYLUM.—Quite recently we enjoyed the pleasure of visiting this institution, situated at Carthage, near Cincinnati. We had visited there before, but quite a number of years had elapsed. The lovely grounds which now exist had then only begun to be cultivated.

Dr. C. A. Miller has recently been appointed the Superintendent by the Board of Trustees. In the two or three months he has been in office the beneficial results of his management have begun to show themselves. As regards his classification of patients, some adverse criticism has been made by some dissatisfied persons. In one of the medical journals quite recently there appeared an article by one who was lately an assistant physician, ridiculing the mode observed of assigning inmates to wards. But whatever may be said in regard to it, it seems to be the only attempt at classification that has been maintained since the Asylum has been organized.

The attempts made by Dr. Miller's predecessors were soon lost sight of by them, and every ward would soon have all sorts of patients in it. As an example of the looseness of administration that existed previous to Dr. M.'s time, it may be mentioned that during the time of his young critic the books of the institution showed there to be thirty more patients in the house than actual count exhibited. It was the habit, therefore, to permit deaths and discharges to occur without making a note of them. Consequently, at some future time, if the friends of any of these thirty should trace them to Longview they could not ascertain what had afterward become of them. How many were entered and discharged without any note being made of either entrance or discharge it is impossible to say.

To make a nosological classification and assign to wards in accordance, Dr. Miller found impossible. To do so he would be compelled to recognize but six or seven nosological divisions; for, while there is a tenth ward on each side, there is actually but six or seven wards on a side—there being no third, sixth, or ninth wards, and possibly a first. The Doctor has, therefore, found the best classification to be as follows; and our brief inspection of a few hours, aided by our past experience among lunatics, confirms the utility of it:

1st. A ward is made a receiving ward, into which all new patients are placed and kept until they can be afterward disposed of. This ward is conveniently placed upon the first floor back, and was named the eighth ward be-

fore Dr. M. took charge.

2d. In the fifth ward, second floor, the paralytics and filthy cases are placed. Previously the filthy cases were scattered throughout all the wards, causing great inconvenience and annoyance—a great infliction upon those patients of neat habits, but which, heretofore, they have

been compelled to endure.

3d. Epileptics and dangerous cases have their dwelling place in the second ward, third floor. The result of having all the fighting characters in a ward by themselves, under competent attendants, is that there is no longer occurring broken heads, bloody noses, and blackened eyes daily in ALL the wards. On the contrary, collisions are rare. Lunatic roughs are as little disposed "to pitch into one another" as are sane roughs. If they can not find a peaceable, feeble, non-combatant to bruise, they cease to be combatants.

4th. In the tenth ward is placed such harmless, demented persons, as would be suitable for the Infirmary. Necessarily incurable, their proper place is not in the Lunatic Asylum; and if it was cleared of them it would be relieved, to a great extent, of its overcrowded condition.

5th. In the seventh ward, the front ward of the first floor, dwell the working lunatics, who assist in performing the labor of the farm and other work. This ward is convenient of egress and ingress to them.

6th. Cases under special treatment are placed in the

fourth ward,

Of course Dr. Miller does not claim that his classification is a scientific one; but, so far as his experience extends, it is the best that can be practically carried out. There are circumstances existing at Longview interfering with a scientific classification, which do not probably exist in any other lunatic asylum in the United States. It is not only a hospital for the insane, but it is also, to a large extent, an infirmary for incurable lunatics. Not a few of the inmates have been in it for over thirty years. Others have been inmates for five, ten, fifteen, and twenty years. It can thus be perceived the difficulty of making anything like a scientific classification. But certainly whatever may be alleged against that which Dr. Miller has instituted, it is very much better than none at all, which has been the case heretofore. And as regards lunatics who are now admitted, if not found in the house, it can be ascertained whether they have died, escaped, or

been discharged.

There are a number of other features in regard to the management of Longview which we propose to speak of, but we have not sufficient space in this number. We will probably take up their consideration in our next. We will only now mention that we feel sure that every one visiting the institution will be greatly pleased with the remarkably neat and cleanly appearance of all the wards without exception; the healthy, and, in every respect, good condition of all the inmates, showing conclusively that all are humanely treated, having their wants properly attended to, are supplied with plenty of wholesome food. proper clothing, out-door exercise, amusements, etc., etc. Dances are held in the chapel every Friday evening, in which all the patients, whose maladies will allow, participate. Books and the latest newspapers are in abundance throughout the wards, so that all who wish can read; and we found not a few who took great pleasure in keeping themselves posted in what is going on in the busy world outside. The public are not unfrequently horrified by the published accounts of cruelties that take place in this and that lunatic asylum, and in times past it has been whispered (yea, more than whispered) that gross outrages have been perpretrated upon patients in Longview. But under the manifestly humane management of Dr. Miller no one having friends there need have any fears but that

the utmost kindness will be exhibited them. This we would certainly not assert unless we believed it.

Members of the profession will be well remunerated for the expenditure of the time to visit the Asylum. They will find Dr. Miller a courteous gentleman, willing to show them throughout the institution.

We nearly forgot to mention that there is in the institution 335 female and 325 male inmates. There is a building apart from the main one which contains 80 inmates. The capacity of the main building was originally designed, we believe, for less than 500.

THE LANCET AND CLINIC.—This is the title of a weekly medical journal, which takes the place of the *Chinic* and the *Lancet and Observer*. It is said to publish twenty pages weekly, but the three or four numbers so far received have contained but sixteen, which will probably continue to be the number published.

This union of the Clinic with the Lancet and Observer is not surprising. It has been known for some time that it would either have to be absorbed by another journal or go out of existence; for its four or five backers had for a long time become weary of meeting its deficiencies. It is quite probable that it has not had for the last two or three years a hundred paying subscribers. Although the cost of printing its half-dozen pages was small, yet, after collecting all that could be obtained from the few subscribers, there was always a sufficiently large amount of deficiency to be collected weekly from the backers as to make it "monotonous" to them, and to cause them to heartily desire to be rid of the annoyance, and to be willing to be rid of it even if to do so it was necessary to hand it over to an individual who had received in its pages the lowest sort of personal abuse. We can not conceive of a greater humiliation that can be inflicted than has thus been inflicted upon the proprietors of the Clinic-being compelled to hand their journal over, insignificant though it was, to an individual who, more than any other, was the object of their hatred and contempt. To Dr. Culbertson it is certainly a triumph. His bitterest enemies have thus been compelled to make a most abject surrender to him. Est difficile noscere quod continget in hoc mundo. Hodie nobis res prosperæ sint, cras res adversæ, etc., etc.

Drs. J. C. Culbertson and J. G. Hyndman have their names inscribed as editors—the former having been the editor and proprietor of the former Lancet and Observer, and the latter editor of the Clinic. It is reported by some, and no doubt they are his old enemies, who are desirous to mitigate as much as possible their humiliation, that Dr. Culbertson is but the printer of the new journal (the Doctor owns a general job printing office), and Hyndman is the editor. But we can not give credence to such reports. We believe that Doctor C. has compelled a complete surrender of his old enemies, and owns

and manages the whole affair.

We wish the Lancet and Clinic success, but we do not believe that a journal of only sixteen pages can be made to succeed at \$3.50 a year. It can only be made to contain short items of medical news. Doctors would rather take a monthly of eighty pages, like the Medical News, that has room for articles of some length, in which scientific subjects can be fully discussed. To call so thin a thing the "representative journal of the West" makes one suspect that Doctor C. has become dazed by the thought of being proprietor of a weekly. The West must be in a bad way if it is the representative journal. Come, it is the best to be more modest. It is the prevalent opinion that a year will wind up the weekly issue, and if such should be the case, the more modesty that had been observed the less the humiliation.

EUCALYPTUS.—We print this month a letter in regard to this drug from a subscriber of the Medical News living in New South Wales. It will be perceived that the News is taken at the "ends of the earth." The letter was received July 25. It should be noticed that it was a good while on the road. It came by the way of San Francisco. Dr. Marshall promises other communications.

The Doctor, who is from England, speaks highly, in a private letter, of New South Wales as a place of residence. He is a microscopist, and is keeping his instrument busy, as he has been informing us by letters for the

last couple of years.

LACTOPEPTINE.—We doubt if many physicians give this preparation that attention it deserves. It is spoken of in the highest terms by many who have extensively used it,

and all should try it. It is much more effectual than pepsine alone, being composed of pepsine, pancreatine, diastase, lactic, and hydrochloric acid. It is serviceable in indigestion, dyspepsia, vomiting in pregnancy, cholera infantum, summer complaint of children, constipation, and such diseases as arise from imperfect nutrition. It is advertised in our advertising pages by the New York Pharmacal Association.

August number of Golden Hours opens with the charming typical picture, "Our Daily Bread," representing the beauty, peace, and abundance brought by the month. It also suggests to us the harvest to be gleaned from this fair field of literature. Golden Hours, full of love, truth, and inspiration, makes the children glad by adding these to the days of their youth. Published by Hitchcock & Walden, Cincinnati, Chicago, St. Louis. Nelson & Phillips, New York.

THE OBSTETRIC GAZETTE.—This is the title of a new medical publication—the first number dated July. Dr. E. B. Stevens, formerly editor of the Lancet and Observer, is the editor and publisher. It contains forty-eight pages, at \$3 a year in advance. The first number bespeaks well as regards the character of the journal. Dr. Stevens has had a long career as an editor, and has proven himself to be an able one.

MARRIED.—At Bedford, N. H., June 22d, by the Rev. Ira C. Tyson, D. Proctor Campbell, M. D., to Miss Alice

E. Watrows, of Green Spring, O.

Dr. Campbell graduated with honor at the Cincinnati College of Medicine and Surgery in 1877. Since then he has been very successfully engaged in the practice of medicine in the New England State of New Hampshire, acquiring for himself a high position in his profession. He has now, like a man of sense, as he is, taken unto himself a wife, selecting such an one as will, from the information we have, fulfill the Bible definition of a wife; namely, be a helpmeet—a lady of sense, education, and culture, who has demonstrated her ability to be useful. We hope he may have many years of happy wedded life, reaching with his companion to a green old age, blessed with children imbued with the virtues he himself possesses.

THE

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PRIGINAL CONTRIBUTIONS.

The Material Basis of Life.

Outlines of a Lecture with some additions delivered before the Teachers' Association,

August 27, 1878.

BY JAS. T. WHITTAKER, M. D., PROFESSOR OF PHYSIOLOGY IN THE MEDICAL COLLEGE OF OHIO.

THE construction, composition and action of protoplasm will engage our attention to-day.

As the substances which construct the living body are not different from those constructing inanimate bodies, so the forces exhibited in life are essentially the same as witnessed in lifeless matter.

The living body, thus, comes to be regarded as an instrument for the exhibition of various forces. As the steam engine liberates in other forms the forces stored up' in fuel, the body sets free in the phenomena of life the forces stored up in the food. We are, however, unable, as yet, to construct a machine that may liberate force as per fectly as the human body. Helmholtz has shown that the best steam engine can convert into motion only onetenth of the force of its fuel, the remaining nine-tenths escaping as heat; whereas the body of man may transform into mechanical work as much as one-fifth of the force in his food; the remaining four-fifths escaping with unoxidized compounds in the various excretions. But the whole amount of force remains always the same; that is, the free force liberated in the body in various forms added to the unliberated (retained) force escaping with the excretions exactly equals the whole amount of force latent in the food.

In the study of physiology we are engaged with the construction of the organism (instrument) which sets the force free, with the mode of action by which it is changed to other forms, and with the various forms under which it reappears.

We have already regarded the matter of the body, the protoplasm, from an anatomical stand-point. We have

now to survey it from a chemical point of view.

What seems especially striking in the chemical analysis of organic matter is the simplicity of its elementary construction. The number of elements entering into its composition we discover to be extremely small. Of the sixty or more ultimate elements into which the matter of our earth is composed but eleven take part in the manufacture, so to speak, of purely organic matter. These are carbon, which is absent in no organic body, oxygen, hydrogen, nitrogen, sulphur, phosphorus and iron, elements most widely diffused, and chlorine, potassium, sodium and calcium among the elements most rarely met. The first four mentioned elements, carbon, oxygen, hydrogen and nitrogen, are the essential elements; the rest are said to be incidental elements.

But no familiarity with the characters or properties of these ultimate elements may acquaint us with the properties of their compounds, the results of their combinations, the so-called proximate principles as they are encountered in the body. No knowledge, for instance, of the peculiarities and characteristics of chlorine, a heavy, greenish-colored gas, with bleaching properties, or of sodrum, a whitish mineral which burns upon the surface of water, would inform us as to the properties and characteristics of the chloride of sodium (common salt), a substance as different from either of the elements of which it is composed as they are from each other. In the study of the structure of the body from a chemical point of view, it is the combinations of the elements, and not the elements themselves, with which we have to deal; the proximate principles, and not the ultimate elements. present the peculiarities pertaining to living things.

There are organic compounds which consist of but two of these ultimate elements, but the great majority of them are made up of three, viz: carbon, hydrogen and oxygen. These carbo hydrates owe their name to the fact that they are composed of, besides carbon, hydrogen and ox-

ygen, in the proportion to form water. Starch and the various sugars, so easily mutually convertible by the addition or abstraction of water, are examples of the carbohydrates. The closely allied fats have an excess of hydrogen, so that all these substances are often grouped under the head of the hydro-carbonaceous compounds.

Another group of organic matters contains, in addition to the three elements mentioned, nitrogen. They are, therefore, known as the nitrogenous in distinction to the non-nitrogenous principles. To this group belong the complex products, the albumenoids (including hæmoglobin and vitellin), which also contain sulphur, phosphorus or iron.

Chemical analysis of the body discloses, besides these two classes of principles, the nitrogenous and non-nitrogenous, a third group of inorganic principles, as water, common salt, phosphate of lime, etc., contributing to the formation of tissues and juices of every character and

consistence.

The chief constituent of protoplasm is albumen in some one or other of its numerous forms. Albumen with water in considerable amount, mineral matters and fat, these are the substances which compose the animal cell. Protoplasm is thus a peculiar albuminous compound, tough and viscid before undergoing subsequent change, which coagulates under heat (or at the death of the cell as in rigor mortis), and which is swollen up or gelatinized, but is not dissolved by the action of water.

It is a humiliating confession to have to make, but it is true, as Frey remarks: "This is about all we know at

present of this important compound, protoplasm."

We recognize in albumen, in some of its forms, the fundamental substance in the composition of protoplasm. In the lowest forms of life at all times and in the higher forms in the embryonic stage, albumenoid (protein) bodies are universally present. But as development advances in the more complex forms the differentiation of individual masses of protoplasm into separate tissues and organs is characterized by a change of the protein bodies into some of their more permanent derivatives, as chondrin, elasticin, etc. What especially characterizes the albumenoid bodies is their instability of structure, that is, the readiness with which they may be broken up into new compounds. In this decomposition, the force latent in

the albumen is translated into active forms with the development of various decomposition products which escape in the secretions. Such products are urea, lencin, tyrosin, creatin, creatinin, glycogen, peptones and ferments. Some of these products, glycogen, peptones, etc., are true secretions, having further purpose to subserve in the body; others, urea, creatin, creatinin are veritable excretions, effete matters of no further use. Grossly considered, the first mentioned useful products correspond to the steam of the engine; they are the agents of force; while the second class of useless products are the ashes and smoke; they must escape from the body, as their accumulation in it extinguishes the processes of life.

The protoplasm (or cell contents) is thus composed of albumen in some of its forms, of water, of mineral matter and of fat. The outside or cortical layer of protoplasm (the cell), when such a layer is present, differs from the inner substance in its greater density. The albumen is here converted (differentiated) into elasticin, which, as its name implies, is more resistant and elastic, and hence is better qualified to serve as a protection to, and to regulate diffusion for, the more delicate protoplasm inclosed.

The nucleus of the cell, again, may also be differentiated into a wall and more fluid contents chemically somewhat different in turn from the wall and contents of the main cell. Thus minute granules are readily precipitated in the nuclear contents by the addition of alcohol and acids, while the wall of the cell differs from that of the nucleus by the greater solubility of the former in alkalies.

The nucleolus, from its high refracting properties, is supposed to consist of fat.

With this glance at the chemical constitution of the cell we are better prepared to continue the study of its properties.

Cells have the power to absorb, assimilate or store up material from without, to elaborate or transform the material thus absorbed, and to filter out, excrete or eject material from within.

In the ordinary growth and nutrition of the cell new matter passes by penetration, imbibition or osmosis, directly into the substance of the cell. The whole collection of cells constituting the body may be roughly compared to a sponge soaked in nutrient fluids. These fluids

penetrate the wall, and thus constantly contribute to the cell new material. Just as every plant absorbs from the earth the particular salts essential to its growth, does each cell drink up from its earth, the part of the body in which it is found, the particular elements essential to its growth and work. The cell in this way feeds itself, absorbing with what seems a selective agency (chemical affinity) the material upon which it can live and work, and with some discrimination refusing to absorb useless and innutritious matter. The new matter may then be transformed into the protoplasm of the cell (assimilated), or it may be stored up for other use in its work. Thus the protoplasm grows, imperceptibly increases in size, or fills itself with foreign bodies (blood corpuscles, fat cells, coloring matters), which may be seen entire or in fragments in the body of the cell.

The transformation of matter (metabolism) in the interior of the cell, is the highest physiological endowment of protoplasm. In this process chemical changes, to large degree inscrutable as yet, are incessantly at work. Musclecells and nerve-cells elaborate in this way their irritability and other properties which endow them with their peculiar physiological dignity as the master-tissues of the body. Gland cells manufacture ferments; as the gastric epithelium, pepsin, the pancreas, pancreatin, or new compounds, as the mammary cells, milk, sugar, liver cells glycogen; from the disintegration and rearrangement of matters pre-existent in the blood. Lastly, certain masses of protoplasm (cells) come to be set apart for the purpose simply of filtering out from the blood and eliminating from the body various products of decomposition

and waste.

The most important factor in effecting these various metamorphoses is oxygen gas. To great extent the chemical changes in the cell, the metabolism of the cell as it is called, are phenomena of oxidation. The various excretions of the animal body are, for the most part, products of oxidation. Of these excretions, some, carbonic acid gas and water, are completely oxidized products. while others, the urates, for instance (but not urea) escape only partly consumed (oxidized) and must undergo further oxidation outside of the body before they are resolved into the fully oxidized products, water, carbonic acid gas, ammonia, etc.

Oxidation (union with oxygen), so far as we can follow it, causes the decomposition or splitting up of compound into simple bodies. Deoxidation (abstraction of oxygen) causes or attends the rearrangement of simple into compound bodies. The plant (vegetable) cell has the power, under the light and heat of the sun, to disengage oxygen and rearrange the atoms of simpler into more compound bodies. In this way the plant-cell builds up and stores up these compounds as latent force. The animal cell (protoplasm) has the power to reduce these compounds, with the aid of oxygen, and set the latent force free.

Thus the first and simplest organic substance constructed by plants is starch. Vegetable seeds imbedded in clean sand and moistened with water, containing only mineral matters in solution, germinate and develop into plants containing a large amount of starch. The simple

process is as follows:

Carbonic Acid. Water. Oxygen. Starch.
$$C_6 O_{12} + H_{10} O_5 - O_{12} = C_6 H_{10} O_5$$

In order to effect this union between the carbonic acid gas and water and coincident abstraction (exhalation) of oxygen gas, the plant-cell must needs employ a peculiar ferment known as chlorophyll. This substance represents the coloring matter of plants, and is present sometimes merely as a green modification of the vegetable protoplasm or oftener as a granular deposit, which may be separated. It is the most powerful reduction ferment of which we have any knowledge. With the aid of sunlight it not only decomposes water, but also separates oxygen from the carbonic acid gas in the atmosphere. fixing the carbon in the substance of the plant. Thus are formed the various hydro-carbonaceous (non-nitrogenized) principles of the plant, starch first, as "the mother principle," whence others (cellulose, sugars, fats) are easily derived by the addition or subtraction of equivalents of water. Thus:

The great mass of organized matter in both plants and animals consists (aside from water) of carbon compounds; carbon united with oxygen, hydrogen and nitrogen. These compounds are built up in plants from inorganic matters in the earth and air. The carbon is chiefly derived from

the carbonic acid gas in the air. The vast magazines of carbon stored away in our inexhaustible mines of coal. extending from the tropics to the poles, were abstracted from an ancient atmospheric ocean far richer in this gas than the air about us now. The remaining ingredients, oxygen, hydrogen and nitrogen, are derived from water and air, and the ammonia and nitrates constantly present in each. Compounds of these simple bodies are constructed in the protoplasm of nature in the same manner as in the laboratory of art. In fact, complex organic substances have been already thus artificially compounded. Wohler first, in 1828, made urea (CH₄ N₂ O) from the cyanate of ammonia and a number of organic compounds. allantoin, for instance, and various organic acids, have

been since artificially constructed.*

The essential difference between organic and inorganic compounds lies in the fact that the inorganic compounds are products of oxidation (combustion). They have been already oxidized, these ashes of nature, and admit of no further combustion. Organic compounds, on the other hand, containing little or no oxygen, are still highly oxidizable (combustible). The phenomena of life; that is. the liberation of the latent forces stored up in these compounds, depends upon the oxidation of these compounds. We have as the result of life precisely the same oxidation products (excretions) from these compounds as after their more direct combustion. When an animal or vegetable body is burned (oxidized), the mass of it is resolved into the gases of combustion. The carbon unites with oxygen to become carbonic acid gas (CO_a), the hydrogen unites with oxygen to form water (H,O), or with nitrogen to form ammonia (NH3), while the phosphorus and sulphur (when present) remain with other inorganic matter in the ash. Examination of the ash reveals carbon (not escaped in gas), chlorine, potassium, sodium, calcium. magnesia, iron, etc.; the same elements and principles discovered in the various excretions of the living body.

^{*}Urea is formed from the cyanate of ammonia simply by depriving this compound of some of its ammonia by heat. It was discovered that nitrogen gas would unite with carbon (charcoal) under the influence of carbonate of potash at a red heat. The cyanide of potassium which is thus formed yields ammonia, when decomposed with water; so that cyanogen, and through cyanogen, ammonia can be primarily derived from their respective elements contained in the inorganic world.

The plant-cell then absorbs from the earth and air these inorganic oxidized compounds, and under the light and heat of the sun liberates the oxygen and fixes the now deoxidized compounds in their substance; whereas the animal cell absorbs (ingests) the deoxidized compounds and the oxygen with which it burns (oxidizes) them, and thus again reduces them to gases and salts for reabsorption by the plants. That is, the earth and air feed the plants, the plants feed the animals, the animals feed the earth and air. This is the great circle of nutrition in nature. The carbon of the carbonic acid gas in the air becomes the carbon of cellulose, starch, sugar, fat, etc., of the plant, which, in turn, furnishes carbon for the albumen in the blood, muscle, brain, etc., of the animal, by which it is again delivered over as carbonic acid to the air, whence it was derived

The plant-cell fixes in its body as latent force the light and heat of the sun, that the animal cell may set it free in other forms as in heat, electricity, mechanical work, nerve-force, etc. But that the animal cell may possess this power, it must make constant consumption of oxygen gas. In the body of man, where the liberation of force meets its highest expression, the consumption of oxygen is immense. A man of average weight inhales, by various avenues, 700-1000 grammes per day, that is 500-700 pounds of oxygen a year. And as the great bulk of his body is composed of material already thoroughly oxidized (two-thirds to three-fourths of it is water), it may be readily seen that all the organic matter of the body would be soon resolved into gases and ash were it not for the new matter constantly furnished by the food. The new matter thus furnished so nicely balances the loss by oxidation that the body, though in incessant change. may lose nothing of its weight in years. And that the atmosphere may also remain the same under the constant consumption of oxygen by animal cells, this gas must be as perpetually furnished by the plants. Thus that the 700-1000 grammes of oxygen, appropriated by each human being in a day, to say nothing of other animals, may be restored to the air, the plant must decompose enough water and carbonic acid gas to make 33-40 lbs. of starch, cellulose, etc., in the same period of time.

Oxygen being thus the principal agent in decomposing the matter of the animal cell, and setting free the force which it contains, we may now consider its appropriation

by the various organs somewhat in detail.

To commence, then, at the beginning of the cell, it is observed that the ovum breathes. The butt end of the chicken's egg has a cavity filled with air, which, according to Bischoff, contains, on the average, 23. 5 per cent. (more, thus, than the atmosphere, which contains but 20 per cent) of oxygen gas. This cavity is a reservoir of air for extra demands. Oxygen continually penetrates the shell of the egg in greater quantity as the shell grows thinner, in correspondence, thus with the increasing de-

mands of increasing development within.

In Baumgartner's artificial hatching experiments, so conducted that the absorption of oxygen and exhalation of carbonic acid gas could be accurately measured, it was observed that the egg gained in twenty days (up to the time of the escape of the young chicken from its cavity) 26.82 per cent. in weight, a gain attended with the absorption of 6.29 per cent. of oxygen, and the escape of 8.412 per cent. of carbonic acid gas, and 24.69 per cent. of water. The volume of the oxygen absorbed from the air is always greater than that escaping with the carbonic acid gas, as the oxygen not only contributes to the formation of carbonic acid gas and water, but is also used in the formation of other products remaining in the substance of the egg.

Though there are many recondite chemical processes continually in operation in the body, most of the changes connected with the development of force are simple oxidations. The force-material of the body may be said, therefore, to be represented by oxidizable (organic) combinations on the one hand, and by free oxygen on the

other.

The direct absorption of oxygen gas has been observed by Kuhne, in the case of the ciliated epithelial cells. The movements of cilia are intimately connected with the consumption of oxygen. They cease in its absence,

and they can not be started again without it.

The contraction of muscle protoplasm is as closely connected with the absorption of oxygen, and the excretion of carbonic acid gas. But it is not so much the muscle substance itself that is oxodized in the production of muscular force, as the non-nitrogenous elements of the blood, circulating through the muscle. For it has been now

pretty clearly established that the urea, urates, etc., products of the waste of muscle itself, are not increased in the excretions (urine) in correspondence to muscular exercise. On the contrary, the increase concerns the carbonic acid gas exhaled from the lungs, proof that it is the carbo-hydrates of the food, and not the nitrogenous muscle itself which serve as fuel for the muscle machinery. When a muscle is at rest, the blood in its emulgent veins is red in color, but after contraction its escaping blood is deoxidized to a blue color, showing that oxygen is used up in the blood. But oxidation of muscle-sub stance itself does take place, in some, though slight, degree. For, aside from the presence or absence of its products in the urine, a muscle will continue to give off car bonic acid gas for a time, even when washed free of blood. or even when placed in an atmosphere absolutely free from oxygen, as in hydrogen gas. The production of carbonic acid gas in this instance depends, of course, upon the presence of oxygen, stowed away in the muscle previous to the experiment. The protoplasm of the tissues is everywhere the chief seat of the processes of oxida tion. If a separate muscle, free of blood, be inclosed in a gas chamber, it will absorb more oxygen, and give off more carbonic acid gas during contraction than during rest. Examination of the blood of the femoral veins in the frog, after galvanization of the posterior extremities shows an increase in the amount of carbonic acid gas.

But the blood is also a vast field for the operations of oxidation. The hæmato-globulin, the albumenoid principle of the blood corpuscles, collects it at the lungs, and carries it in loose combinations for surrender to the valous tissues of the body. Then the blood corpuscles are endowed with what we might term a magical power of converting oxygen into ozone. Ozone (nascent oxygen) is a peculiar modification of oxygen, with much higher oxidizing powers than simple oxygen. The molecule of oxygen being represented by one O, that of ozone is triplicated. Ozone is O₃, so that it has much wider range and power.*

^{*}If a drop of blood be let fall upon a piece of ozone test paper (made test paper by having been saturated in tincture of guiacum, and afterward dried) a deep blue color forms about it. This is the reaction of ozone. The serum of the blood will not show it at all (Schmidt). The ozone of the blood can not be directly established in this way as it is at once used up for oxidation purposes. The ozone thus proven present has been just created by the blood corpuscles.

The blood, again, very greatly assists the oxidation process by its alkalinity. All alkalies have this property. Many organic compounds, not at all affected by oxygen, are at once attacked in the presence of a free alkali. The organic acids ingested into the body pass over unchanged into the urine, or, at most, are oxidized to very slight degree; but when they reach the blood in the alkaline combinations which they speedily form, they are at once completely oxidized, and appear as carbonates in the urine.*

Nerve-force would seem to be generated more directly by oxidation of nerve-substance, as the quantity of arkaline phosphates in the urine, the product of oxidation of the phosphorized fats of nervous tissue stands in close correspondence to the amount of brain-work. Though the brain weighs only one-fortieth of the entire weight of the body, it receives one-fifth of all the fresh blood in the body, a proportion which sufficiently indicates the activity of the changes continually taking place. "We may rightly liken the brain to a galvanic battery, and the blood to its exciting liquid. When the curcuit is closed, a rapid oxygenation of the nerve-substance, as of the zinc of the battery, takes place; and a corresponding equivalent of nerve-force (which seems closely related to, but is not identical with electricity) is generated. But the blood also serves for the nutritive renewal of the nerve-substance in its interval of repose; thus supplying it with the potential energy, which is converted into actual energy by the oxygenation that destroys it as a living tissue" (Carpenter).

Paul Bert has been able to prove that the loss of consciousness and motion, which occurs immediately when the blood-current to the brain is interrupted, is due to the lack of oxygen rather than of any other nutrient matter. In cases of partial asphyxia, induced by abstraction or rarefaction of oxygen (as in mountain ascents) the faintness and exhaustion are immediately and

^{*}Gallic and pyrogallic acids, for instance, are not oxidized in the atmosphere, but on the addition of a free alkali, oxidation occurs so quickly that the solution of pyrogallic acid can be used in eudiometry, and sugar becomes so oxidizable in the presence of a free alkali that it will abstract a part of its oxygen from a metallic oxide, and thus reduce an oxide of copper, for instance, to a sub-oxide (Trommer's test for sugar). According to Gorup-Besanez, even ozone will not oxidize the organic acids except in the presence of a free alkali or alkaline salts (Vierordt).

completely relieved by the inspiration of oxygen gas or of air which is highly charged with it. The transformations of force that occur in the body, that is, the manifestations of life, are thus pre-eminently processes of oxidation.

In recognizing this fact we would be led to believe that the quantity of this gas, and its most frequent product, carbonic acid, in the blood and tissues would always be very great. We observe, however, the very reverse to be true. There can, at no one time, be collected from the blood more than four grammes of oxygen or carbonic acid, and adding to this the quantity present in the tissues (a quantity which can not yet be definitely ascertained, but which is known to be very small), the whole amount of these gases is still comparatively little. But this small amount present at any one time is no true criterion of the sum-total absorbed in the course of time. For this small quantity is being so continuously received (and consumed) as to amount in the course of a year to several hundred pounds. In fact, more oxygen is ingested than food (aside from drink). The absolute indispensability of oxygen gas from moment to moment, is proven by the serious changes that at once ensue in the body when its quantity is diminished in the air. Other nutrient matter may be absent from the body for hours or for days, without discomfort, but the absence of oxygen for a few seconds or minutes produces serious suffering.

Oxygen is, in short, an essential constituent of living protoplasm, which develops only at the bottom of an ocean of it, thousands of cubic miles in extent. The atmospheric ocean, which is as much a part of the earth as its water or its salts, is an inexhaustible, a perpetually-filling reservoir of oxygen gas.

We have now to consider the mode of origin or birth of protoplasm, and its mode of dissolution or death.

When the microscope first began to disclose its revelations concerning the construction of living things, it was hoped that we were at last in possession of the means that would lift the veil of mystery concealing the genesis of life. It was believed that it would be only necessary to perfect the instrument for the highest magnification to enable us to see the first aggregation of atoms to constitute life. It is needless to say that such extravagant conceptions soon proved to be delusive. With the micro-

scope on the one hand, and chemical analysis on the other, the physical basis of life was soon resolved into its histological and chemical elements; but no peculiar principle of life was ever thus discovered. The microscopists soon found themselves, said Leydig, in the predicament of individuals who had long studied from afar the appearance of a meadow or a forest. They thought that a nearer approach would inform them about the germination, the growth and the coloration of the plants. Many new observations they did make, it is true, but the puzzling riddles remained the same. They stood before the same questions, with the difference only that they could now study the changes in each individual plant, which they could observe before upon the whole green surface.

The physiologist thus, aided with the microscope and the test-tube, took only a closer view of the individual elements aggregated in the construction of living things.

In the impossibility of recognizing in the construction of animate bodies any elements or principles different from the inanimate, the question at last arose: Is there really any such difference? Thus the question stands at the present time, the burden of proof resting upon those who still maintain the existence of such a difference.

Whatever may have been the genesis of protoplasm in the primeval world, or whatever it may be now under conditions somewhat similar, at the bottom of the sea, for instance, are questions still unsettled. So far as we have positive knowledge, and it is of facts alone that we have any right to speak, every cell arises from a preexistent cell. Omne vivum ex ovo and omnis cellula e cellulis are other well-known axioms, expressive of the exclusive derivation of new protoplasm from older protoplasm before it. Science at present recognizes no other birth of protoplasm save that derived from parentage. The microscope, in discovering the eggs of plants and animals in concealed places, has put to flight many wild ideas concerning the spontaneous generation of animal and vegetable life. And when these ova or germs have been so minute (in the case of bacteria, etc.) as to have evaded the highest powers of the microscope, a beam of electric light (Tyndall) has disclosed to the naked eye myriads of combustible (organic) particles, the cultivation of which in breeding experiments (Dallinger & Drysdale) has resulted in visible forms.

In our day we regard the reproduction of protoplasm entirely as a phenomenon of nutrition. It is part of the chemical nature of protoplasm that an isolated mass of it, increased by assimilation to a certain size, has the disposition to divide, the divisions again dividing, and so on, in the formation of new masses, isolated as before. Reproduction is division and separation in growth beyond the natural limit of size. Nutrition and reproduction are, as we have seen, the fundamental characteristics of protoplasm, and they stand in the most intimate relation toward each other. One continues the individual, the other continues the species. Nutrition consists of a constant change of matter in the body of the individual; reproduction of a constant change of individuals. Nutrition, in its essence, is only a reproduction of atoms of matter in the body of the individual, which atoms, when increased beyond the natural limits of size, separate to reproduce new individuals. Hence it becomes a physiological law that a more rapid nutrition implies a more rapid reproduction. The better fed domesticated animals breed faster than their ancestral wild forms. More human beings are born in times of plenty than in times of famine. Of course if the nutritive matter be consumed in the production of other forces, as in the growth of the body. muscular or mental work, the power of reproduction is limited. During youth and adolescence the force of reproduction is absent entirely, or is very limited. Animals made to perform mechanical (muscular) work have less progeny (stallions, etc., are kept idle in the stalls); and human beings of high mental activity are comparatively infecund.

With this knowledge of the physics of reproduction, we are not surprised to learn that its material manifestations are simply divisions of the parent cell. This division may concern the protoplasm first, so that a more or less central constriction, vertical or horizontal, deepens to a furrow, and finally completely separates the main mass and its nucleus (when it exists) into two, each of which then commences its independent existence. In more complex structures the division of the generative cell (ovum) proceeds, each division subdividing, until finally the original cell presents the appearance of a mulberry. This process of segmentation, as it is called, provides separate atoms in each part of the subdivided cell

for the construction of separate organs and tissues. The wall of the original "mother" cell may remain intact while this "endogenous" production of new cells is taking place within it, and may even take part in the construction of the new product, or it may burst, as it were, and permit the new "daughter" cells to escape and provide for themselves. The ovum or primordial cell is a typical example of the first method of procedure, cartilage cells of the second. In the cartilage cell, as in the white blood corpuscles of mammals, birds and amphibious animals, and in the red blood corpuscles of the embryos of mammals and birds, the division first affects the nucleus, which splits in two, each half aggregating about itself, by molecular motion, a quantity of protoplasm until the entire mass is thus divided. Such corpuscles are sometimes encountered with 1-2-4 nuclei, each of which attacts sufficient protoplasm to subsequently form a separate cell. So-called "giant cells," which play such an important role in rapidly proliferating structures (cancer, tuberculosis, etc.), are produced by a rapid multiplication of nuclei without corresponding division of the surrounding proto-.plasm.

Or, finally, the division of the cell (protoplasm) may be more lateral than uniform, protrusions shooting out from the mass of protoplasm to finally separate from the parent cell. This method of division by budding, as it is called, is mostly characteristic of the vegetable cell, but occurs also in animal cells (polyps, tape-worms, etc.), and, as a rule, in the regeneration of all cells after partial destruction of tissue. The yeast plants (torulæ) which rapidly develop in myriads in solutions of sugar are convenient objects for the study of reproduction by gemmation.

The cell (protoplasm) having thus been born, it serves its special purpose in the animal economy and dies. The final dissolution and disappearance of the individual cell may occur in several ways. In the first place, it may simply lose its fluid contents, dry up and desquamate, that is, be mechanically rubbed away. Such a mode of death characterizes cells exposed to the open air, as the epithelium cells of the skin. Or cells may perish from excess of fluid, be washed averand lost. This mode of death occurs in superficial a claus cells. The "rice water" appearance of cholera dischalzes is due to the presence of mul-

titudes of intestinal mucus cells, washed off by excessive drainage into the intestinal tube.

But most cells die by liquification of their contents conversion of their protoplasm into fat, or mucus, or water. These substances are then absorbed from the shriveled cell wall, which in turn finally disappears. Lastly, the protoplasm of the cell may be substituted by the salts of lime, and undergoing this calcareous degeneration cease to functionate as cells. The vast majority of cells die by

fatty or calcareous degeneration.

The body of an animal or plant consists, as we have seen, of a single cell, or of an aggregation of such cells. The single-celled bodies are said to be simple, the manycelled compound bodies. These structures are, however, in essence the same; the simple bodies being simply separated further from each other. One such body (cell) depends for its existence (sustenance) upon other bodies. In the compound body the single cells are also in a sense individual, yet they are all mutually dependent. A compound body is like a colony of ants or a hive of bees; completely isolated individuals perish. The cells in a compound body are connected together by fluid, or more or less solid intercellular substance. The intercellular substance is the product of cells. A compound body is made up of cells and intercellular substance.

Like cells, differentiated from the rest and grouped together for a special purpose, constitute the organs or tissues of a compound body. The body thus comes to be made up of organs and tissues, each having a special and particular purpose to subserve for the benefit of other organs and tissues as well as of itself. The body is, hence. constructed upon a plan of a division of labor; just as society is composed of farmers, tradesmen, thinkers, etc.

If we regard the tissues of the body simply from an

anatomical stand-point, we recognize-

1. Tissues composed of simple cells, with fluid intercellular substance as the blood, the lymph and chyle.

2. Tissues composed of simple cells, with a small amount of solid intercellular substance, as the epithelium, nail, etc,

3. Tissues composed of simple stransformed cells cohering (in some cases), situated appetimes in homogeneous, sometimes in fibrous, and, as a rule, more or less solid intermediate substance, as cartilage, colloid tissue, adipose tissue, fibrous and elastic tissue, dentine and

bone (connective tissue group).

4. Tissues composed of transformed, and, as a rule, non-cohering cells, with scanty homogeneous and more or less solid intermediate substance, as enamel, lens and muscle.

5. Tissues so mixed as to admit of no grouping under any of the above heads; as nerve tissue, gland tissue, vessels and hairs.

This is the histological classification of Frey.

If we regard the body from a purely chemical standpoint, we shall have to recognize its separation into the

three great classes of proximate principles.

1. The inorganic principles; definite in their chemical composition, crystallizable, derived exclusively from without (forming to great extent the crust of the earth), subserving their special purpose in the body and then being voided from it having undergone little or no change; as

water, common salt, phosphate of lime, etc.

2. The non-nitrogenized or hydro-carbonaceous principles; which, as their name implies, contain no nitrogen, but are made up of carbon in large quantity, and of hydrogen and oxygen—principles which do not belong to the crust of the earth, but are formed exclusively in the bodies of animals and plants where they undergo such changes as to be entirely broken up and consumed as

such; as starch, the sugars and the fats.

3. The nitrogenized, albumenoid or protein bodies; indefinite in their chemical composition, containing nitrogen and mineral matters in addition to the carbon, hydro gen and oxygen, varying in consistency according to the consistence of the organ in which they are found, hygroscopic (that is, having the power to absorb water and be restored to their original consistence after desiccation), coagulable, spontaneously or artificially, and undergoing fermentation and putrefaction, by serving as food to microscopic animals and plants, which split up their chemical combinations into new compounds (alcohol, carbonic acid gas, water and other products of decomposition), principles also formed exclusively in the vegetable or animal cell and undergoing entire change in the body. Examples of this class of proximate principles, which includes also the coloring matters and certain crystallized

products of excretion, are albumen, fibrin, casein, myosin, pepsin, lecithin, hæmoglobulim, urea, etc.

This is the chemical classification of Robin and Verdeil.

If, however, we regard the construction of the body from a purely physiological stand-point, we shall have to separate the tissues into classes according to pre-eminence in especial properties, with all the rest of which each one is endowed in subordinate degree, as:

1. The tissues eminently mechanical; bone (including teeth), outside layers of epithelium (including hair and

nails).

2. The tissues eminently contractile; the muscles.

3. The tissues eminently irritable; the nerves (and

nerve-centers).

4. The tissues eminently secretory (including excretory); the digestive, genito-urinary, pulmonary, etc., epithelium.

5. The tissues eminently metabolic (elaborative or

transformative); the gland cells.

6. The tissues eminently reproductive; the ovary and the testis.

This is essentially the classification of Michael Foster. A study of these three methods of classification gives a clear survey of the construction and action of the various tissues in the body, whether simple or complex. They display, we might say at a glance, the anatomy, the

chemistry and the physiology of protoplasm.

To recapitulate: The body is built up of cells (protoplasm), which are, in turn, composed of atoms or molecules, whose arrangement (transmitted by heredity and modified by external conditions) determines the special action or use. The action of protoplasm, though sometimes apparently, is probably never really spontaneous. The cells are called into action by stimulus, which, so far as we can trace it, always proceeds from without. The various phenomena of life are principally manifestations of reflex action. In simple bodies (individual masses of protoplasm) the outside stimulus is conveyed from atom to atom, like chemical force in gunpowder from grain to grain. In complex bodies the stimulus is carried along definite trains (nerve-strands) to special destinations. Is a muscle contract, it contracts in obedience to stimuluf carried to it by a motor nerve. The stimulus conveyed along the nerve has its development in a nerve-center

(ganglion). The stimulus experienced in the nerve-center was in turn derived from a sensitive nerve. The sensitive nerve transmits an impression received upon a sensory surface (skin, mucous membrane, gland, etc.). Even the most complex manifestations of the brain fall under the same category. So-called voluntary movements are only the final responses to impressions made upon the special senses at the time or in the past (memory). The highest expressions of the intellect of man may be resolved into the more perfect transmutations of outside forces by machinery made more perfect by original construction (heredity) or made more perfect by labor (education).

Michigan State Board of Health.

BY HENRY B. BAKER, M. D., LANSING, MICH.

THE regular quarterly meeting of this body occurred July 9, 1878, at Lansing—all the members being present, as follows: Dr. R. O. Kedzie, President; Dr. H. O. Hitchcock, Dr. H. F. Lyster, Hon. LeRoy Parker, Rev. D. C. Jacokes, and Henry B. Baker, Secretary.

The subject of a text-book on hygiene for common schools was discussed. No members of the Board had seen a book suitable for such use, and it was thought very

desirable that one be prepared.

Dr. Hitchcock then offered the following resolutions,

which were adopted:

Resolved, That this Board respectfully request the Board of Regents of the University of Michigan, and the Trustees of the Detroit Medical College, to establish in their respective institutions, at the earliest practicable moment, full chairs of public hygiene, and fill the same with thoroughly competent professors.

Resolved, That this Board respectfully request the controlling Boards of all the collegiate institutions, as well as the high-schools, of the State to see that a course of instruction in public hygiene be given in each of their

several institutions.

Dr. Lyster mentioned that, in the interest of public health, he had delivered a course of lectures before the medical class at the University of Michigan during the past six months. He presented a syllabus of each lecture delivered.

Dr. Kedzie presented some results of his investigations on the subject of lead poisoning by the use of tinned ware

and other vessels containing lead.

He said it is well known that there are substances actively poisonous when taken in large doses, that, when taken in small but repeated doses, often produce effects so obscure that they may be mistaken for the symptoms of some chronic disease. Lead, arsenic, antimony, and copper are examples. The chronic poisoning which may be caused by minute doses of any of these metals, and the possibility of mistaking such metallic poisoning for some disease of a different nature, should warn us against their use, or make us careful and guarded while using them. Vessels in daily use for the preparation or serving of food are especially liable to affect the physical condition if they contain any material which will insidiously sap the foundations of health and strength.

Culinary vessels which are cheap, durable, and convenient, and without injurious influences on the health, bear an important relation to the comfort and well-being of the people. Of all cheap metals for such use, tin fulfills these conditions better than any other. It is comparatively cheap, resists oxidation by exposure to air and water, has a white color, is not readily dissolved except by strong mineral acids, and the only salt of tin which is actively poisonous is the chloride, which will never be formed in the domestic use of tin vessels. The readiness with which iron surfaces may be coated over with it con-

tributes to its valuable uses.

Unfortunately, while tin is comparatively cheap and safe, lead is cheaper and very dangerous. Yet the two metals readily unite, forming an alloy which may be used in place of tin, but which will generally oxidize and be dissolved by acids more readily than either metal of which it is composed. The danger of poisoning by the use of such vessels is very great. The attention of the State Board of Health has been called to this subject by a letter from Dr. Dorsch, of Monroe, who writes that he has seen cases of paralysis agitans which had been taken for chorea, although other symptoms of lead poisoning were present, and investigation showed in all cases that cooking and eating with tin spoons, or in earthen and iron

vessels with a coat of lead were the cause. The same is true with milk vessels. The acid dissolves the lead salts, and children are poisoned, dying by tubercles of the brain,

meningitis, fits, and paralytic affections.

Grown persons do not escape, although resisting longer. A similar danger arises from tea and coffee pots of earthen-ware or composition metal, from tin sieves and tunnels, and almost all cooking utensils used by the poor. They are about equally as dangerous as the adulteration of food

and spices, so common all over the country.

The danger of lead poisoning is a matter of great importance, because so large a proportion of our population employ tinned vessels for culinary and table use. The alloy of tin and lead oxidizes much more readily than pure tin, and the oxide of lead is very soluble in acetic acid or vinegar, or lactic acid, forming sugar of lead. also forms salts with malic and citric acids, which are contained in apples, cherries, gooseberries, currants, or any acid fruits. When cooked in vessels containing lead or even placed in them for some time, they are liable to take it up and become very injurious thereby, because all salts of lead are poisonous. In this way a large portion of our daily food may be a vehicle of poison if prepared or contained in vessels containing a sensible amount; and this danger is greater because the compounds of lead are cumulative in their influence. A person may not be poisoned by one or two small doses, but minute doses taken for a long time will break the health, and even destroy life.

The Doctor says that of a large number of specimens of tin plate, tinned iron, and other culinary articles examined by him, he found in almost every instance an alloy with lead, and it was often present in large quantities. It is an astonishing fact that a large proportion of the tinned wares in the market are unfit for use because of the large lead alloy.

TEST FOR LEAD.

Place a drop of strong nitric acid on the tinned surface and rub it over a space as large as a dime. Warm it very gently till dry, and then drop two drops of a solution of iodide of potassium on this spot. The bright yellow iodide of lead will form on the spot if the tin contains lead. This test can be rapidly applied, and the results are decisive,

The Doctor was informed that a peculiar kind of tin plate, the tinning composed mostly if not entirely of lead, was coming into general use for roofing, eave-troughs, and water-pipes. The lead thus exposed would be in conditions favorable for oxidation, and a quantity of oxide and carbonate of lead would be washed away in the rain water and deposited in the cistern with every storm. Susceptible persons may be poisoned by washing in such lead-charged water, and all persons drinking it, even after it has been filtered, will be in danger of chronic lead poisoning. Earthen vessels are usually glazed to overcome their porosity. In many cases this glazing consists of fusible silicates of the alkalies, and alkaline earths. These have no injurious influence on the health. Oxide of lead, when added to the alkaline silicates, borates, etc., makes a very fusible and closely adhering glazing; and is sometimes used, but its use is very dangerous, especially if the vessel contains acid substances. The glazing decomposes and lead salts from which either dissolve or are mechanically suspended in the contents of the jar, and there is great danger of chronic lead poisoning. This danger is unfortunately very common.

ENAMELED IRON VESSELS.

Within a short time an enamel has been successfully applied to vessels made of iron plate, the enamel or glazing taking the place of tin coating on tin plate. As these vessels are coming into general use, it is a matter of public interest to know what would be their influence on public health. He said that a culinary vessel to be safe must be impermeable by water and grease. Metals, especially where vessels are made without seams or joints such as pressed tinware, glass, and many kinds of porcelain, are admirable in this respect. Glazed crockery after the glazing is fissured is very poor in this respect. If the new enameled ware shall prove satisfactory, it will be an important acquisition. At the present time the most hopeful outlook for good, safe, and cheap culinary vessels lies in the direction of some fixed unabsorbent enamel for pressed ironware which will maintain an unbroken surface under all conditions of domestic use.

Another indispensable condition for a safe culinary vessel is that it shall not contain any poisonous material by which the food cooked or contained in it shall be injur-

iously affected.

The specimens of granite-ware which he had examined failed to reveal any poisonous or injurious substance. He regarded it as a safe material to use, but feared its power to resist the tendency to crack after it had been frequently heated. The marbleized iron-ware presented very different results. The enamel was found to contain a large amount of lead, and even traces of arsenic were obtained from the enamel by the use of Marsh's apparatus. In a quart basin of this marbleized iron-ware he placed eight ounces of water containing five per cent. of nitric acid, heated it boiling hot, and kept the whole in a warm place twenty-four hours, then evaporated the dilute acid to dryness, dissolved the residue in water, filtered, and from the filtrate precipitated the lead, obtaining in this way what was equivalent to twenty-three grains of lead. In a similar basin of marbleized iron-ware eight ounces of vinegar (free from lead) were placed, and kept in a warm place twenty-four hours, and then treated in the same manner as the dilute acid. This resulted in obtaining what was equivalent to seven grains of lead. On powdering some of the enamel and heating it with concentrated acids, very distinct traces of arsenic were obtained. This was probably not present by design, but accidentally from being contained in some of the substances used in making the enamel. A culinary vessel which contains so much lead, and in such a state of feeble combination that eight ounces of ordinary cider vinegar can in twenty-four hours dissolve from a quart basin what is equivalent to seven grains of metallic lead, must be a very unsafe vessel for general use.

The subject of Sanitary Conventions was considered, and after some discussion in regard to the kind of subjects to be treated, and their mode of treatment, it was voted to hold such a convention at Coldwater, Mich., during the coming winter—being invited to do so by Dr. J. H. Beech, of that city. The Secretary was directed to make the

necessary preparations.

Invitations were also received to hold conventions at Pontiac and Detroit, from Rev. D. C. Jacokes and Dr. Lyster, who, on behalf of the citizens of their respective cities, promised active efforts for the success of such

meetings.

One interesting feature of these meetings is expected to be the exhibition of all sorts of sanitary appliances; a kind of Sanitary Fair where all interested can exhibit or examine articles designed to meet the wants of the peo-

ple in their efforts for public and private health.

Dr. Hitchcock, having attended the meeting of the American Medical Association at Buffalo, at the request of the Board, gave a written report of the proceedings of the public health section of that body. The proceedings of the American Social Science Association, so far as they related to subjects connected with the public health, were reported by Dr. Kedzie.

On the Board being informed, by the Secretary, of the resignation of Rev. C. H. Brigham, on account of continued ill-health, a preamble and resolution were adopted, expressing sympathy with him and regrets at losing his

services on the Board.

The Secretary presented a communication on Typhoid Fever from George Chapman, M. D., of Hudson, which

will appear in the Annual Report for 1878.

An account of an outbreak of scarlet fever at Michigamme, Marquette Co., and of the energetic and apparently effective means employed for its restriction, received from J. R. Curley, Clerk of Michigamme Township, was

presented.

A communication from George Voorhees, M. D., of South Bend, Ind., giving an account of the fatal burning of a young lady in that city by the Rose burning-fluid, was read. In that connection Dr. Kedzie called the attention of the Board to the fact that the Ohio Legislature had followed the example of Michigan, having passed a law for the inspection of illuminating oils, similar to, though not quite as good as the one in Michigan secured by the efforts of this Board.

Communications were read from the Michigan State Inspector of Illuminating Oils, giving an account of the burning to death of an old lady in Bedford Township, Monroe Co., from the breaking of a kerosene lamp, probably filled with Ohio oil below our standard, and also another giving an account of the explosion of a lamp at East Saginaw, caused by the faulty construction of the wick tube.

The Secretary presented a report of the work done in his office during the preceding quarter. Besides the regular work of preparation of manuscript for the Reports,

compilation of reports of diseases, distribution of postal blanks for weekly reports, ordinary correspondence, etc., a circular (28) had been prepared and sent to all Health Officers in Michigan (1222 in all), giving them general suggestions in regard to their duties, and the obligations of local Boards of Health, as guardians of the public health.

A large number of copies of the Sixth Registration Report, compiled by the Secretary, had been distributed to the regular correspondents of the Board, sanitary journals received as exchanges, and prominent sanitarians.

After the usual auditing of bills and accounts, the Board

adjourned.

The next regular meeting will be held October 8, 1878.

SELECTIONS.

Lactopeptine.

This valuable aid to digestion has been before the public for several years, so long, in fact, that there are probfew physicians practicing in cities who have not already tested it thoroughly. To these it is unnecessary to say anything in commendation. To the country practitioner,

however, it may be well to again refer to it.

At first sight the combination may not appear to be an effective one; it may be supposed that the action of the stomach upon the constituents calculated to aid in testinal digestion would be such as to prevent any influence being exercised in any way upon the alimentary bolus after it has been subjected to gastric digestion, that is to say, pancreatine would probably be digested along with other articles of food. Although we might come to some such conclusion a priori, yet experience teaches us that fats are more easily and completely digested and absorbed when Lactopeptine is taken after meals containing such articles of diet than after taking any of the preparations of pepsin, even when combined with the acids, in connection with food. This fact is of the utmost importance in the treatment of wasting diseases, especially in children.

In the summer diarrheas of children we have found

Lactopeptine of the very highest value. It is probable that weakening of the digestive powers is a very important factor in the causation of cholera infantum. We have found Lactopeptine a most important help in restoring these cases when they have passed through the worst stages of that disease, as well as in warding it off when its onset seemed almost inevitable.

In the exhausting vomiting of pregnancy we have found it of very great value in enabling the patient to obtain some nourishment from the food ingested, even if it remained but a short time in the stomach. In the nausea and indigestion and cardialgia which cause so much annoyance, even if no great danger, in the later months of gestation, Lactopeptine has proved itself almost a specific.

The article used was that manufactured formerly by Reed & Carnrick, now by the New York Pharmacal Association.—St. Louis Clin. Record.

Ligature of the Carotid for Hemorrhage after Erysipelas.

A SINGULAR case, for which ligature of the carotid was employed with success, was lately communicated by M. Denuce to the Academie de Medecine. The patient was a young officer who suffered from a suppurating otitis, accompanied first with severe pain, and afterward swelling in the temporal region, with erysipelatoid redness. Three incisions were made in the swelling, each at a few days' interval. The last was followed by considerable hemorrhage, easily repressed by the application of perchloride of iron and by pressure. Eighteen days later, while the patient was rapidly improving, a large hamorrhage suddenly occurred, filling the cavity of the phlegmonous abscess, and escaping in jets at the several openings. Compression and ligature of the temporal artery did not arrest the hemorrhage, and the cavity was therefore filled with lint soaked in perchloride of iron, which for the time stopped the bleeding. Two days later it recurred, and was arrested by the same means, but a considerable increase of the sloughing inflammation was the consequence. and the abscess spread to the region of the jaw, and thence a fresh hemorrhage occurred externally and into the mouth. Compression and perchloride of iron were again

resorted to, but the patient had become extremely anæmic, and evidently unfit to bear a fresh hemorrhage. The common carotid was therefore tied, the tumefaction of the upper part of the neck being too great to permit of ligature of the extended carotid. The huge temporal cavity was then emptied, and its blackened walls dressed, with slighter pressure, and daily washed out with a solution of "coal-tar saponine." The walls rapidly presented granulations, and at the end of a month cicatrization was almost complete. The ligature fell without any disturbance, and the patient rapidly recovered.—Lancet.

Risks in the Obstetric Use of Chloroform.

WE have been accustomed to think of lying-in-women as possessed of some special tolerance of chloroform and other anesthetics. Undoubtedly they have escaped in a high degree the fatalities which are too familiar in surgery. But a careful paper before us by Dr. William T. Lusk, of New York, "On the Necessity of Caution in the Use of . Chloroform during Labor," reminds us that even in obstetrics the use of chloroform becomes dangerous if not carefully practiced by qualified men. Dr. Lusk especially deprecates the tendency to leave its administration to nurses. Dr. Lusk's views will be gathered from the following propositions:—1. Deep anesthesia, carried to the point of complete abolition of consciousness, in some cases weakens uterine action, and sometimes suspends it altogether. He insists on the propriety of allowing the patient to recover some consciousness in cases where chloroform is given during delivery by forceps. Otherwise, the uterine action being suspended, hemorrhage "is certain to follow." For ourselves we do not see the necessity to give chloroform deeply for the purpose of using forceps. Where it is given Dr. Lusk's precautions should certainly be observed. 2. Chloroform, even when given in the usual obstetrical fashion-viz: in small doses -during the pains only, and after the commencement of the second stage, may, in exceptional cases, so far weaken uterine action as to create the necessity of resorting to ergot or forceps. He thinks that those who habitually use chloroform in normal labor resort to forceps more frequently than others. 3. Patients in labor do not enjoy

any absolute immunity from the pernicious effects of chloroform. In support of this proposition he has gathered five cases together in which death either occurred or was threatened, and in which there was no cardiac or pulmonary complication. In two cases the patient ceased to breathe and the pulse to beat. In a third, in which only "a little" chloroform was given on a handkerchief with each pain, the breathing suddenly stopped, and the pulse ran down alarmingly. Under the Marshall Hall method of treatment she soon began to breathe again. Of the five cases two were fatal. One was a primipara, going on well but for a slight convulsion as the head was emerging. The other, reported in 1876 in our columns, was a multipara, in which chloroform was given under the direction of a Sister of Charity, preparatory to version for shoulder presentation. 4. Dr. Lusk's fourth proposition is that chloroform should not be given in the third stage of labor. The relative safety of chloroform in parturition ceases with the birth of the child. He thinks it a most dangerous practice either for putting sutures into a ruptured perineum or for the removal of the placenta. In a case of the latter sort, where, after a long labor ended by forceps under complete anesthesia, hemorrhage occurred, and it was thought desirable to remove the placenta. As the patient resisted the introduction of the hand, a little chloroform was given. But sudden and fatal collapse followed, and, Dr. Lusk says, made such an impression on him that nothing would induce him to give chloroform again in that stage of labor. Dr. Lusk's object is not to deter from the reasonable use of chloroform in labor, but to commend precautions which will make it absolutely safe.—Lancet.

Contemporaneousness of Eruptive Fevers in the Same Subject.

THE question as to whether eruptive fevers can be simultaneously developed in the same person has always been one giving rise to much discussion. M. Bez, having collected together a great number of observations on this subject, has just published a very complete work, which would seem to solve the problem. After having traced the whole history of the question, the author discusses, in

the first chapter the co-existence in the organism of the virus of measles and scarlet fever. In a general way the two fevers are developed side by side; the exceptions to this rule only concerning points of detail or special circumstances. Measles, without being always abnormal, presents more frequent and various irregularities than scarlet fever (less prevalence of morbillous exanthem in cases where measles precedes scarlet fever, absence of catarrhal prodromata of measles in a contrary case), When there is a simultaneous appearance of the two eruptions there is not a fusion of scarlet fever or measles into a third morbid form, but a union of the general symptoms of the two fevers, and not the production of a new malady, rotheln or rubeola. Concerning rotheln or rubeola, or epidemic roseola, the author raises a very important discussion, and, after a very complete history, he proves that a number of different conditions are classed under this title, both contemporaneous eruptive fevers and abnormal eruptive fevers. Under the name of rubeola, he describes a mild eruptive fever which bears the same relation to measles that chicken-pox does to smallpox. This is also the opinion held by Trousseau. Prognostically the cases where measles has succeeded scarlet fever appear the most serious. Although difficult of explanation, this fact has not been the less plainly established by the observations recorded in the thesis. The co-existence in the economy of the virus of measles and small-pox produces also modification in the symptomatic manifestation of the two affections. Measles, during the febrile stage, retards the maturation of the vesicles and lessens the suppuration of the pustules of the small-pox. This action has nothing special, but is analogous to that of other febrile affections. When there is co-existence of the two eruptions, measles has no influence on the smallpox except that it remains rather later. Apart from these circumstances the two eruptive fevers develop together, without reciprocal modification. From a prognostic point of view, the cases where there has been a successive eruption of measles and variola have been the worst. Scarlet fever and small-pox may also show themselves simultaneously in the same individual; but there are fewer peculiarities to be noticed in the simultaneous development of these two diseases. Like measles, scarlet fever, when developed at the beginning of the small-pox

eruption, retards its development. But this action is only manifested in a very few cases. This is held referable in a great degree to the fact that a great proportion of patients have not had scarlet fever until after the small-pox eruption has been completely developed. Measles and chicken-pox co-exist also very often in the same individual. In spite of the frequency of this coincidence, but few observations of it have been published. The two maladies do not seem to be influenced by each other. Chicken-pox may also accompany scarlet fever without such co-existence giving rise to any special points. M. Bez has collected sizty-eight cases of the exanthemata of measles, scarlet fever, or chicken-pox appearing in the course of vaccination. It is mostly measles or chickenpox, far oftener than scarlet fever, that complicates vaccination. All the facts cited support the opinion that whenever vaccination has been practiced during the incubation or invasion of eruptive fevers, they have never been the cause of either absence of development of the vaccine, prolongation of the period of incubation, or failure of it. The only influence which eruptive fevers exercise on the phases of maturation, suppuration, and desiccation of the vesicles is that they are retarded or prolonged more or less. Typhoid fever is sometimes followed, at a late epoch of its development, by an eruptive fever. As Murchison has remarked, it is very rarely that typhoid fever is seen to come unexpectedly in the course of an eruptive fever; the contrary has nearly always been noticed. He says this is due to typhoid fever, unlike scarlet fever, measles, small-pox, or chicken pox, not possessing an essentially contagious nature. M. Bez studies last the extremely rare cases where three eruptive fevers co-exist in the same individual. The gravity of the malady, according to Rilliet and Barthez, is greater when the eruptions have appeared one upon another, while if they are separated by an interval of health, all three may succeed each other without proving fatal. The diagnosis is sometimes very difficult. The most common error consists in taking varioloid or hemorrhagic small-pox, accompanied by erythemata resembling measles and scarlet fever, for the triple association of measles, scarlet fever, and smallpox.—Jour. de Med. et de Chirurgie Practique.

Clinic on the Hepatic Cyst.

BY T. GAILLARD THOMAS, M. D., NEW YORK.

I have the pleasure of bringing before you to-day one of the most interesting cases that we have seen during

our whole course this winter.

The patient's name is Laura F., a native of Germany, and thirty-one years of age. She has been married six years, and has three children, but no miscarriages. Her last child was born thirteen months ago, and the duration of her present trouble is nine months. About nine months ago, her physician informs me, she first noticed a swelling in the right hypochondriac region. From the situation and character of the tumor, which was, perhaps, of the size of a goose-egg, he concluded, very naturally, that it was the distended gall-bladder. She had some trouble in her digestion, being obliged to take food frequently, as she was able to eat only a small quantity at a time, and complained of great pain at the time of her menstrual periods.

Previously she had been perfectly healthy in every respect. After that the doctor did not see her until a comparatively short time ago, and he then found that the tumor had enormously increased in size, and that the woman was

not as strong as formerly.

To-day we find the enlargement, whatever its character, to be of the size of a pregnant uterus at the end of seven and a half or eight months, as I can show you through the patient's clothing. The chief point in connection with the case is, of course, to decide what this tumor is, and on that another depends: When we have ascertained its true character, what treatment shall we adopt for it? Its general appearance is that of an ovarian cyst, but we will not jump at any conclusion. I shall make the diagnosis very carefully here, for the reason that I believe this to be a form of cyst which is very rare, and which is very different from an ovarian cyst, and therefore it is important that you should get the characteristics of the case strongly fixed in your minds.

When you see such an abdominal enlargement as this, a number of ideas as to what it may possibly be at once present themselves. Let us now take up briefly some of the forms of enlargement which it might be, and in doing

so we will omit certain extremely rare kinds of abdominal tumor.

First of all, I have no doubt the idea of pregnancy occurs to you. It is thirteen months since the patient's last child was born, and so it is altogether possible that another fœtus may now be at full term.

Again, it might be an ovarian cyst, and, as I have said, it presents very much, indeed, the appearance of one.

Then, again, it might be a uterine fibroid. Next, it might be due to abdominal dropsy.

In the next place, it might not be a tumor at all, but simply an accumulation of fat in the abdominal walls.

Still further, it might be due to tympanites.

In examining whether the enlargement may not be dependent on some one of the several conditions suggested, let us begin with the last—tympanites. The question of tympanites is at once definitely settled by resorting to percussion over the surface of the tumor. When this is done, we find that there is everywhere the most complete dullness, amounting to absolute flatness; and we can therefore safely conclude that we have to deal with some body which is certainly not aeriform in character.

An immense mass of fat has been mentioned as a possible explanation of the tumor here present. I once performed ovariotomy in a case in which the diagnosis was somewhat obscure in certain respects, and when the incision was made into the abdomen I found a deposit of fat at least four inches in thickness in its walls. But if there were a mass of fat, it would be superficial, so that by grasping the abdominal walls deeply with the fingers, we would get under it, which is found to be impossible here. Then, again, great obesity would scarcely be suspected from such a history as has been given of this patient.

Now, let us see whether the diagnosis of pregnancy will stand the test of physical exploration. I examined the uterus thoroughly by conjoined manipulation, and finding it entirely undeveloped, apparently, ventured to introduce the probe, when I ascertained that it passed easily to the fundus, and that the canal of the organ was only of normal length. In addition, the woman has continued to menstruate regularly every month.

Might it not be uterine tumor? Probably not, because we have been able to map out the size and shape of the uterus, and are able to move the organ freely about by

means of the uterine sound without producing any effect upon the tumor. Then, uterine tumors are almost always solid in character, and here we get a distinct sense of fluctuation.

Is it ascites? Suppose you place some intestines in a tub of water. They will at once rise to the top. So here, if we had ascites, and the woman were lying on her back, the intestines would float on top. But listen to the percussion-note on the site of the tumor. There is perfect flatness everywhere, while upon the left side, on the contrary, there is well-marked tympanitic resonance. We must, therefore, exclude ascites. It is true that localized peritonitis will occasionally shut up fluid in some particular part of the abdomen, surrounding it with a wall of lymph. In such cases a differential diagnosis between this condition and ovarian cyst is often exceedingly difficult, and one might almost be considered excusable for opening the abdomen with a view to performing ovariotomy; but still, such a mistake will seldom be made if all the means at our disposal for making the diagnosis of

ovarian disease are employed.

· From the physical characteristics of this tumor we can decide with considerable certainty that it is a fluid cyst of some sort. We have ascertained by means of the sound that it is entirely distinct from the uterus. It is then an ovarian cyst? Such was my impression when I first saw the tumor; but, on making a careful examination, I found two points in connection with it which militated very strongly indeed against such hypothesis. The first was, that I was utterly unable to feel the tumor with the finger in the vagina. The force of gravitation usually keeps the inferior part of these ovarian growths low down in the pelvis, where, of course, they originate. The second point was that, on making percussion carefully up and down the abdomen, on the side of the tumor, I was able to make out a distinct area of resonance between the latter and the position of the ovary. Then, besides, it is a very rare thing to find an ovarian cyst localized like this. They are forced by the muscles wherever there is the most room for them, and so they are almost universally found in the middle of the abdomen, though always commencing in the side.

When I found that it was not an ovarian cyst, my next thought was that it was one of those localized peritoneal dropsies of which I have spoken. But I soon found that it was movable to a certain extent (though not very freely), which would not have been the case with such a collection of fluid surrounded by walls of inflammatory lymph; and then there has been no history whatever of any attack of peritonitis, either general or circumscribed.

The next thing that will probably occur to you is that it is a renal cyst. Several cases of tumor of this description have been cut down upon, under the idea that they were ovarian, even by men of the most distinguished reputation. It is certainly possible that this may be the di-

agnosis here, though I think it is not probable.

The question still comes up, therefore, what then is it? There is still another kind of cyst of which I have not yet spoken, and that is the hepatic cust, the growth being connected directly with the liver itself. It is so exceedingly rare, however, that it is scarcely mentioned in medical literature at all. A professional friend of mine, who is admirably qualified to do so, has looked up the subject very carefully in the books and journals, and has been able to find almost nothing in regard to it. I do not, of course, now refer to the hydatid cyst of the liver, which is well known, but am speaking of the pure hepatic cyst. That it is a condition which we may be liable to meet with occasionally, however, is certain. Not long since a young surgeon in a neighboring place told me he was about to perform his first ovariotomy, and a short time afterward I learned from him that when he had opened the abdomen he found both the ovaries perfectly healthy, but that there was an enormous cyst of the liver, in which there was nothing whatever like hydatids.

I think I am therefore justified in suspecting the presence of an hepatic cyst in the present instance, and in order to derive what assistance we may from an examination of its contents, I have drawn off a small quantity of the fluid by means of the hypodermic syringe. You observe that it is opaque, and of a strongly marked yellowish color; and Prof. Dalton has pronounced it to contain the coloring matter of the bile (not bile itself, you understand, but its coloring matter, at all events). You see the reaction with nitric acid upon this plate. I do not think it can be a hydatid cyst, as there have been none of the features of this condition present. I take it to be an hepatic cyst which is very close to the gall-bladder, and

whose contents have, therefore, become tinged with its coloring matter. It seems probable that a process of exosmosis has taken place. It could not be the enlarged gallbladder itself, for it is impossible that that should become so enormously distended. One other point corroborative of the supposition of the cyst's being connected with the liver is the fact that, on percussion, there is no line of resonance whatever between the liver and the tumor, there being one continued area of dullness from the upper border of the liver to the lowest point of the growth; while, as you remember, there is a line of resonance between the latter and the pelvis. In addition, I find that the left lobe of the liver is very large and prominent, so that it can be mapped out with great distinctness, and the hand slipped under it, as is usually the case when there is a large fatty liver. It would, at all events, indicate some

diseased condition of the organ.

Having at length arrived at a probable diagnosis, we come now to the subject of treatment. Is anything to be done for this patient, and, if so, what? It seems to me that some inference will have to be practiced in the case, from the fact that the cyst is increasing in size so rapidly. But, at the same time, any operation like that for ovarian tumor is out of the question. If this growth is an hepatic cyst, it is not at all likely that it can be removed with safety to the patient. In ovarian cyst, drawing off the fluid is no longer resorted to by any one as a sanative procedure. Paracentesis ovarii is only of service as an aid to diagnosis and as a palliative measure for the relief of certain urgent symptoms. But here I think we might perhaps draw off the fluid with advantage. Is there no danger in such an operation? you ask. Yes, there is great danger from the escape of fluid into the peritoneal cavity, for fatal peritonitis might easily result from this cause. You know that of late years gastrotomy has been several times performed; and you have probably all heard of the celebrated case of M. Labe, of Paris, in which a silver fork was extracted from the patient's stomach by this means. Before drawing off the contents of this cyst, I should advise that an inflammatory adhesion should be effected between the parietal and visceral layers of the peritoneum, in the same manner as was done in these cases, in order to prevent the fluid from escaping into the peritoneal cavity. This might be accomplished by means of

a slough of the abdominal walls caused by the application of nitric acid; or, in other words, a nitric acid issue. Through the center of this the needle of the aspirator could be passed, and it is possible that a single evacuation of its contents might result in the cure of the cyst. If it did not, the operation could be repeated whenever it should become necessary. Of course, no internal remedies will have any effect whatever upon the growth. For me this is an exceedingly interesting case, and I trust it has proved so to you also.—Medical Record.

Phosphorus in the Treatment of Chronic Alcoholism.

The Journal d'Hygiene, of February 21, 1878, contains an article on this subject, taken from the Gazette Medicale Itallienne. Dr. d'Ancona, the author of the paper, remarks in the outset that this mode of treatment is not new, but he thinks it has not received the attention which it deserves. He justly states that the rapid increase of troubles, due to the excessive use of alcoholic liquors, and the great difficulty of treating such cases effectually, makes any remedy, which seems to render any service to such patients, worthy of careful study and investigation.

The etiology and symptomatology of chronic alcoholism are, alas, but too well known, and hence he deems it unnecessary to consider these points. He gives the details of five cases in which he has used phosphorus in the form of phosphide of zinc. We give a brief history of one of these cases. The treatment was commenced on the 20th of May, 1877, and continued without interruption till the 1st of October following. During this time the patient took from one to ten centigrammes of the remedy a day. Eight grammes were taken in all. During the month of October, it was only given four days each week, in the dose of three centigrammes each day. There were no evil results produced; no loss of appetite, and no gastric disturbance; indeed, the general condition steadily improved.

He comes to the following conclusions at the end of

his paper.

1. Phosphorus is a very useful remedy in the treatment of chronic alcoholism.

2. The medicine is perfectly tolerated in doses which

no one has dared to give heretofore—ten centigrammes

(nearly 1½ grains) a day for many weeks.

3. The remedy gives to drinkers a feeling of comfort and strength, and furnishes the force necessary to carry on their organic functions, which they have been accustomed to get from alcoholic liquors.

4. The medicine seems also to have the properties of a prophylactic and an antidote, for it causes very beneficial changes in the system, even when the use of liquor has

not been entirely stopped.

Dr. d'Ancona then gives a theory as to its modus operandi in three cases, and in conclusion begs that a fair and impartial trial be given the medicine, and that the results be published.—Virginia Med. Monthly.

Langenbeck on the Removal of Foreign Bodies from the Œsophagus.

Some excellent hints on the extraction of foreign bodies from the pharynx and esophagus are contained in a lecture delivered by Prof. von Langenbeck before the Berlin Medical Society.

The finger, he says, should always be used to try and extract large foreign bodies before any instrument is introduced, and the latter should be reserved for those cases where the foreign body is too firmly impacked for the finger to remove it. Tracheotomy would probably always be performed too late, for large objects—such as sets of false teeth, which are among the commonest sources of these accidents—may rapidly kill by pressing the epiglottis firmly down on the rima glottidis, and suffocating the patient. Before chloroform is administered to elderly people the surgeon should always make sure that they are not wearing false teeth.

The finger should also always be used to feel for small-pointed bodies, such as needles, fish-bones, etc., which are so apt to lodge in the hollows between the glosso-epi-

glottic ligaments.

Large bodies, like lumps of meat, potatoes, etc., not unfrequently lodge in the æsophagus at the level of the cricoid cartilage, and may give rise to great dyspnæa by pressure on the larynx or trachea. They can readily be detected at times by a globular prominence on the left

side of the neck, but are often difficult to extract, owing to spasmodic contraction of the œsophagus above and below them.

In two cases of this kind, Prof. von Langenbeck succeeded, by squeezing the mass between his fingers, in altering its shape, so that in one case it was readily extracted by the forceps, and in the other it passed down into the stomach.

If the body can not be felt in the neck, we must not trust to the patient's statements as to its position, for they are generally wrong, but must examine the œsophagus with an instrument from within. Von Langenbeck strongly condemns the use of whalebone bougie armed with a sponge for this purpose, as recommended in many German works on surgery, for it is impossible to feel with it, and hence to discover the position and the consistence of the foreign body; and the latter is frequently pushed deeper down, and rendered impossible to move; or it may even, as has actually happened, be forced through the wall of the esophagus into the posterior mediastinum. The use of such an instrument must be restricted to the removal of soft bodies which may be pushed down into the stomach (if need be) without doing harm. Prof. Langenbeck himself invariably uses a polished iron ball, fixed to the end of a whalebone rod, for catheterizing the gullet. If well oiled this instrument enters easily, can be easily moved about during exploration, and with it hard bodies, such as coins, needles, and bits of bone can be detected with certainty.

Where he simply wishes to try and force a soft object into the stomach, von Langenbeck prefers a gum-elastic esophageal bougie. It enters with great ease, and no

harm can be done with it.

Foreign bodies, which may become dangerous by wounding the esophagus or by impaction in the bowel, should always be extracted by the mouth if possible. Under this head fall pieces of bone, splinters of glass, coins, needles and fish-bones. Prof. von Langenbeck has performed a large number of such operations without a single accident. He invariably uses von Graete's "coincatcher," an instrument which, all things considered, leaves nothing to be desired.

There is additional reason for promptly extracting foreign bodies from the œsophagus—namely, that if al-

lowed to remain they may become a source of serious danger to the patient. Adelman collected 314 such cases, and among these there were 109 deaths. Of course there are numbers of cases where the foreign body is either successfully extracted, or else pushed on into the stom-

ach, which are never published.

If everything else fails, and the cervical portion of the gullet is implicated, esophagotomy must be performed. This operation is comparatively rare; up to 1872 it had only been done twenty-six times for the removal of foreign bodies. Von Langenbeck gives the details of two later cases of his own in the lecture before us, and points out that since there were in these twenty-eight cases twentythree recoveries and five deaths, esophagotomy must not be regarded as a very dangerous operation. He describes the details of the operation, which closely resemble the account given in English works-for instance, in Bryant's Surgery. One or two points only deserve notice in von Langenbeck's description. To render the esophagus prominent before incision he recommends a strong gum-elastic œsophageal bougie or a flexible pewter sound to be introduced, provided the prominence of the impacted foreign body is not sufficiently marked. One condition may be met with during the operation which may make it extremely difficult to perform-namely, swelling of the thyroid gland from venous stasis. This condition, which Prof. von Langenbeck mentions, owing to his not having found it described elsewhere, is always present if a large body has been impacted for several days at the level of the cricoid cartilage, and has caused dyspnœa by its pressure on the larynx. The swollen gland spreads out over the esophagus so as to completely cover it, and it is necessary to divide the fascia inclosing the gland, so that the latter may be drawn away from the esophagus.

Lastly, the Professor warns surgeons not to force their way inward, in an operation like the above, with the finger or with blunt instruments, for fear of injuring vessels or delicate nerves. "The nearer an operation has to be performed to important organs, the more closely must our manipulation resemble the finest anatomical dissection, and operators can not be too strongly warned not to tear the tissues in the manner just described."—Medical

Times and Gazette.

The Phonograph.

WHILE lately re-perusing Hood's "Literary Reminiscences"-one of the best things ever written by that merriest of unfortunate men-we came across a passage which jocosely anticipates the invention of the phonograph. Referring to those "ambrosial nights" at Colebrook Cottage, the residence of the gentle Elia, where some of the wisest and wittiest of that day were wont to meet, he says: "Alas, what a pity it is that so many good things uttered by poets and wits and humorists at chance times—and they are always the best and brightest, like sparks struck out by Pegasus' own hoof in a curvet among the flints-should be daily and hourly lost to the world for want of a recorder! But in this century of inventions, when a self-acting drawing-paper has been discovered for copying visible objects, who knows but that a future Niepce, or Daguerre, or Herschel, or Fox Talbot, may find out some sort of Boswellish writing-paper to repeat whatever it hears."

This was said in jest, but science has made sober earnest of it. We have now a writing paper that will record what is spoken to it, and talk it back whenever we wish—a machine as simple as a coffee-mill, yet more wonderful in its results than any magical device that Oriental imagination

in its wildest flights ever dreamed of.

It is remarkable that two such inventions as the telephone and the phonograph should have been made almost simultaneously. They are both very simple in design, and yet they must be reckoned among the most extraordinary applications of scientific principles that have ever been devised. The one virtually annihilates space, the other time, in the transmission of sonorous vibrations. The telephone enables us to talk to people miles away; the phonograph preserves our utterances for coming generations. The old maxim, scripta manent, has lost its point, for the spoken word becomes as permanent as the written; it writes itself down in a form which admits of indefinite reproduction in the future.

The phonograph differs from the telephone, however, in being entirely independent of electricity or magnetism. It simply makes a record of the sounds, or rather of the vibrations that produce them; and this record can be reconverted at will into the original vibrations and sounds

by purely mechanical means. Our readers are, doubtless, ere this, familiar with the construction of the machine, for no recent invention has been so much written about "in the papers." They are aware that it consists of a mouth-piece, with a vibrating disk much like that of the telephone; that this disk has a needle at the back, which at each vibration is pressed against a spirally rotating cylinder covered with tin-foil, upon which it makes a slight indentation. The successive vibrations produce a spiral line of these indentations, which, though differing but slightly to the eye, are really an exact record of all the varying sounds that have caused them. This is the listening operation of the machine; to make it talk back what it has heard, the needle is made to traverse again the spiral line of indentations, throwing the disk into vibrations similar to those recorded, and thus repeating the sounds.

The precision and distinctness with which every intonation and peculiarity of speech can thus be reproduced are marvelous, and yet no more wonderful than some phenomena of sound with which we have long been familiar. When we are shut up in a close room, we can often hear what is said on the other side of a wooden or even a brick partition. In this case the sonorous vibrations are transmitted through the air until they reach the wall. Here we might suppose that they would be stopped and destroyed. What force can the delicate air-waves exert against that solid barrier? The slight aerial undulations may have originated in the vocal chords of a canary-bird's or an infant's throat; and will they suffice to shake that stout and heavy wall? Yes; such is the strength of those sound-waves that they compel that seemingly inelastic partition to sway in unison with themselves. It takes up the complicated vibrations, and, what is more surprising, it gives them out again to the air on the other side, and this transmits them to our ears. The sounds have lost something of clearness in passing through this thick and rigid obstruction, but they retain enough of their original character to be heard and understood without difficulty. Here the wall is a vibrating disk like that of the telephone or the phonograph—a big and clumsy one, but how sensitive to these undulations of the air! how quick to catch them, to thrill in sympathy with them, to give them out again unchanged! If the multiplicity

and complexity of vibrations that make up spoken words can be transmitted without material loss or injury through a barrier apparently so unfit for the purpose, need we wonder at their registration and perpetuation by this listening and talking machine? Our familiarity with these common phenomena of sound renders us insensible to their marvelous character. Miracles that are repeated every day and every hour cease to be miracles; it is only when they take some fresh and novel form that we see their true nature. The telephone excites our admiration. but the air is a telephone that we have been using all our lives. When it brings to our ears the music of a distant bell, we must admire and wonder, if we reflect upon what occurs. The bell when struck vibrates through a mere fraction of an inch, and yet the air-waves, started by this slight motion, roll away for miles in every direction, and repeat themselves on the tympana of thousands of human ears. Myriads of other sounds are sending their undulations through the air at the same time, crossing one another's paths in every direction, yet not interfering (or so seldom that what is known as the "interference of sounds" is one of the rarest of acoustic phenomena), so that the atmosphere is forever a labyrinthic network of swiftly moving undulations. It is a telephone conveying millions of sounds at once, vet without confusion or disorder. If all this intricacy of movement could be made visible, if we could see these innumerable sound-waves agitating the great aerial ocean, how poor and mean in comparison would all these acoustic devices of man's making appear! These are indeed curious and admirable. but at best they are feeble imitations of the mechanism of nature.—Journal of Chemistry.

Class-Room Lessons on Syphilis.

BY FESSENDEN N. OTIS, M. D.. Clinical Professor of Genito-Urinary Diseases.

TRANSFERENCE OF SYPHILIS BY CONTAGION.

Gentlemen: -I will next direct your attention to the transference of syphilis by contagion.

Recent investigations in regard to the disease germs of contagious diseases warrant the assumption of Dr. Lionel Beale ("Disease Germs, their Nature and Origin," London, 1872, page 143, 21 seq.) that they are degraded cells (bioplasts), originally derived from the healthy elements of the human organism. Having lost, by degradation, the capacity for development into useful tissue, they still retain the power of amæboid movement, proliferation, and vital sustenance. This view affords a starting-point for the rational explanation of syphilitic disease, which, so far as known, is confined to the human germinal elements. It is distinctly appreciable only in the lymphatic organs and channels, and in lesions which can be directly traced to disturbances of structure or function in the lymphatic system.

In complete accord with all that is known in regard to syphilis, we may assume, that contact of normal germinal cells (white blood-corpuscles), with those which have been degraded through the syphilitic influence, brings about a similar degradation in them; and these again, in the same way, acquire the power to degrade other normal germinal cells with which they may be brought into con-

tact, whether in the same or in another person.

Thus the syphilitic influence, at the point of original inoculation, in varying intensity, is transferred from cell to cell, until its vitiating power is lost, by attenuation, or dilution, or until the entire organism is profoundly affected. Thus it is that we shall meet with syphilis, in varying degrees of severity; from that where the subject passes through it with scarcely a single characteristic manifestation, to one, who, in its various periods, will present a classical picture of every phase of the disease.

Germinal cells from one source or organism, can not come in contact with those of an independent organism,

without a breach of tissue.

Experiments by inoculation of syphilitic blood, and of the unmixed secretions of unirritated syphilitic lesions, have demonstrated the complete absence of any erosive property in the so-called *virus* of syphilis. In the wounds of such inoculations, healing was as rapid, and perfect, as in similar wounds where no inoculation had been made. All the secretions of syphilitic lesions, and of the blood, during the active stage of syphilis (usually from one to two years), contain degraded germinal cells or disease germs, and are thus capable of communicating syphilis.

The modes of transference of syphilis, from the diseased to the healthy, are three:

1st. By direct contact of the diseased surface with an abrasion, or other breach of tissue, on a healthy person.

2d. By mediate contagion.

3d. By hereditary transmission.

Communication of syphilis by direct contact (as under the circumstances peculiar to the venereal act), is the most frequent mode of the acquirement of syphilis. In the female, initial lesions, from this source, are most common in the vicinity of the ostium vaginæ; especially so in the folds of mucous membrane about the fourchette; between the greater and lesser labiæ; under the sheath of the clitoris; upon, and even within, the meatus urinarius. They are also found to occur, not unfrequently, about the anus. They are rarely found on the os uteri, and still more rarely on the vaginal rugæ.

In the male, the most frequent sites are upon the glans penis and prepuce; occurring with especial frequency in the sulci by the side of the frenum; at the meatus urinarius, and in the fossæ glandis, and occasionally on the

integument of the penis.

as the mucous patch.

In both sexes the initial lesion is sometimes found upon either lip, in the angles of the mouth, or even within it, and also near, or within, the anus; all as a result of direct contagion. Communication of syphilis, by direct contact, through the act of kissing, is an accident of occasional occurrence. In this case, the inoculating secretion may be furnished, either by an initial lesion, or, by one of the common manifestations of active syphilis, known

Initial lesions are also found in various other localities, as solutions of continuity, at any point, may become the accidental recipients of the syphilitic contagium. Usually they are rare in proportion to their distance from the genitalia. Surgeons, accoucheurs, and gynecologists, are especially exposed to the peril of an innocent inoculation of syphilis, by direct contact. Within the circle of my city acquaintance, at the present time, are three medical gentlemen who acquired syphilis through an initial lesion on the right forefinger. In another case, a surgeon, also an acquaintance, received the syphilitic inoculation in the end of his right forefinger, through accidental puncture,

by a spiculum of bone, while amputating the leg of a syphilitic subject.

INOCULATION OF SYPHILIS THROUGH MEDIATE CONTAGION.

Cells diseased by the syphilitic influence (or what is usually termed the syphilitic virus) may cling to substances with which they are brought into contact. All degraded animal cells, or disease germs, have the power of maintaining their vitality for some time after removal from the organism in which they have been developed (Beale). Any material, therefore, which has been in contact with the secretions of syphilitic lesions, or the blood of a syphilitic, during the active stage of syphilis, may prove the medium of communication of syphilis to a healthy person, provided only, that the substance so contaminated is brought into contact with a lesion, however

slight, of the skin or mucous membrane.

The most common source of the contagium, in cases of mediate contagion, is the mucous patch, a constitutional syphilitic lesion, frequent upon the mucous membrane of the lips, mouth, and faucial region, in persons passing through the active stages of syphilis. The saliva is thus impregnated with the syphilitic disease germs, and, through it, a variety of domestic utensils have been the known media of syphilitic inoculation, by contact with abrasions upon the lips of healthy persons, without regard to age or sex. In the same way, pipes passed from syphilitic mouths, cigars from syphilitic cigar-makers, canes, pencils, and even sticks of candy, contaminated by syphilitic saliva, have effected a syphilitic inoculation. Within the last eighteen months I have met with four cases where there was undoubted proof of the acquirement of syphilis through mediate contagion. One of a young lady, with the initial lesion on the lower lip, acquired from her lover's kiss. The second, a physician, with the initial lesion just within the angle (on the right side) of the mouth, from a syphilitic friend's pipe. The third, in the same locality, appearing characteristically, about three weeks after a morning spent in a dentist's chair. The fourth, a worthy merchant, with his initial lesion (well marked) on his lower lip, with mucous patches in his mouth, and an accompanying syphilitic iritis. In this latter case the only clew to the mode of acquirement of syphilis was the habit of passing among

numerous clerks, and occasionally transferring a lead pencil from their desks to his mouth.

Well marked constitutional syphilis, with complete absence of any genital lesion, was present in each case cited.

The foregoing typical cases, illustrative of the modes through which syphilis may be contracted by mediate contagion (with the exception of the last), were seen in consultation with physicians from neighboring States. Such accidents, however, are of more likely occurrence in great cities, where moral restraint is least stringent. and opportunity for acquiring venereal diseases most favorable. It becomes necessary, therefore, in connection with cases of obscure disease, simulating syphilis, to make a searching scrutiny of all incidents, conditions, and exposures, which may, in the light of possible accidents, point to opportunity of syphilitic infection, through mediate contagion. The third case cited is of especial value, as conveying a lesson on the necessity of scrupulous care of instruments used in operations about the mouth.

So simple a procedure as the depression of a patient's tongue with a spatula, in examinations of the mouth and throat, may easily become the means of carrying the syphilitic disease germ to an abraded surface in a healthy

person.

In all cases, therefore, where the same instruments are in use for different persons, after thorough cleansing, their passage through the flame of an alcohol lamp should be systematically practiced after every operation. The same procedure is equally indicated in regard to instruments used upon other mucous membranes, as those lining the urethra, the bladder, the rectum, the eye. It is also essential in all instruments used in cutting operations at any point. Not the least important among the modes of conveying syphilis by mediate contagion is that by vaccination. Numerous well authenticated cases of this disaster may be found recorded in any modern systematic work on syphilis. Inoculation of syphilis by vaccination may be effected either by an impure virus or an unclean knife. Use of the bovine virus, by means of a clean instrument, relieves this beneficent operation from the stigma of being considered a possible means of communicating syphilis .- Medical Record.

Chloral Hydrate in Tetanus.

BY SWEITZER S. HARWOOD, SURGEON PACIFIC MAIL-SHIP "CITY OF NEW YORK."

THE following points in the successful treatment of a severe case of traumatic tetanus by chloral may prove interesting:

The spasms affected the whole of the body; the exciting cause being a neglected sloughing wound near the left heel. The patient was a man of intemperate habits, ex-

citable disposition, and large frame.

1st. The tolerance of the drug was marked. A very large quantity was given hypodermically during twenty days, in doses varying from five to fifteen grains, at intervals of half an hour to four hours, with occasional relatively larger doses by the mouth. On one occasion 200 grains were administered subcutaneously and 100 grains given by the mouth from 9 P. M. to 9 A. M. On another, 240 grains at one dose by the mouth produced no lasting effect.

2d. Difficulty was experienced in bringing about absolute narcotism by hypodermic injections. Decided narcotism only occurred twice, and this not by this mode, but after large doses given by the mouth. In the first instance 100 grains in divided doses given within an hour and a half produced great relaxation of the muscles, inincluding those affected by the tetanic rigidity. Narcotism was complete, but transient; and was succeeded by symptoms indicating disordered cerebral circulation; active delirium, with frequent hard pulse, being especially marked. In the second instance it occurred from a dose of 240 grains, administered by mistake on the part of the nurse during commencing convalescence. Here it was extreme, but soon passed off, without treatment, leaving no unpleasant after effect.

3d. A state allied to alcoholic intoxication was caused by the chloral. While taking it the patient was always more or less in a state which an intimate knowledge of him enabled one to note as identical with that generally present during the second stage of alcoholic intoxication.

4th. During the treatment, chloral was exhaled from the body of the patient in such quantities as to affect those in close attendance on him. Thus, while breathing the air of the sick room, I felt considerable nauseating pain in the lower and back part of the head, accompanied by lassitude and impairment of muscular power, not readily accounted for otherwise. A gentleman and also a female were correspondingly affected. Fresh air soon removed these unpleasant and singular symptoms, but in each case they returned on again breathing the air of the sick chamber. It is also worthy of record that the repeated hypodermic injections were followed in numerous instances by points of suppuration.—Pacific Medical and Surgical Journal.

The Gospel Shall not be Preached to Heretics.

At the recent session of the American Medical Association the following amendment to the Constitution was proposed by the judicial council, and laid over, under the rules, for consideration at the next annual meeting:

"It is considered derogatory to the interests of the public and the honor of the profession for any physician or teacher to aid in any way the medical teaching or graduation of persons, knowing them to be supporters and intended practitioners of some irregular and exclusive system

of medicine."

This provision was intended to cover a particular case, and in their endeavor to accomplish this, the wise men of the judicial council appear to have entirely overlooked the literal construction and application of the clause. Should it be adopted, it will become a violation of the Constitution to teach sound and rational medicine to a heretic-to admit to medical lectures any person who is given to homeopathy, eclecticism, hydropathy, or any other dogma or set of dogmas, and who seeks a knowledge of regular medicine. To our view the provision appears not only impracticable, but absurd. Fancy an orthodox clergyman addressing his congregation on this wise: "Brethren, if there be any present who are heretics or given to unsound faith—if there be any Unitarians, or Roman Catholics, or infidels—if there be any whose doctrines do not conform to those of this church, they are requested and required to withdraw; for I am forbidden to proclaim the gospel of truth to any but true believers." Will any one show us wherein the two cases are not parallel? When the amendment shall come up for action, we trust it will be modified so as to express its true meaning and design, or otherwise be rejected. Power is a dangerous possession, either in an individual or an association. It might be well for the members of the national association, which, by the way, we have always sustained and defended, to reflect whether there is not a tendency in some quarters to excess of legislation. The American people are not remarkable for their submissive disposition, and doctors, of all men, are most inclined to rebel against tyrannical restraint.—Pacific Medical and Surgical Journal.

Transactions of the St. Louis Medical Society.

IMPACTION OF THE COLON.

Dr. Prewitt:—I have a portion of the ascending colon and lower part of the ileum, illustrative of a class of cases in which practitioners blunder more frequently, perhaps, than any other with which we meet. The patient, when first seen by me in company with Dr. Thomas Scott, had been sick for several days. He had, at the time, the evidences of general peritonitis, and was deeply jaundiced as well. The general peritonitis subsided to a great extent, leaving a swelling, induration and great tenderness in the right iliac and lumbar region. The history was that of inflammation originating in the ileocæcal region, and we have here an illustration of the pathological condition we are called upon to treat in these cases. Dr. Scott will give the outlines of the case. On making a post-mortem, we found evidences of the general peritonitis which had existed in adhesions, in every direction. The most marked evidences of inflammation were in the right iliac and lumbar regions. The free border of the caput coli and ascending colon were adherent to the abdominal wall by abundant plastic matter. On detaching this we found to the outer side of the colon, and between that and the abdominal wall, a large blood-clot, extending from caput coli to the lumbar region. This clot was in a state of decomposition, and the colon in contact with it was gangrenous. There were various rents in the colon wall, through one of which a mass of blood in the bowel could be seen protruding and forming a part of the clot lying outside. There is no invagination through the ileocæcal opening, nor was there any accumulation of fæcal matter in the bowel. The liver, a specimen of which I present, was tinged a deep yellow. In fact, all the tissues

were tinged with bile pigment.

Dr. Thos. Scott:—The patient, aged thirty, was a man of fine physical development. He was taken sick on Sunday night, 24th of March, and seen by me first on the 25th. The abdomen was then tense, and the stomach irritable; constant vomiting and great thirst. The bowels had not been moved for several days, and I ordered an enema, at first without effect. After repeated injections, numerous scybala were removed, followed by a pretty large evacuation of dark offensive fæcal matter, with great relief to the patient. Ordered sinapisms to the abdomen, followed by hot fomentations, and opiates internally. He rested well that night, and seemed much relieved next morning. Repeated the enema and from this on his bowels moved freely enough; healthy, well-formed evacuations, but deficient in bile. There was still great tenderness over the abdomen. Under the influence of calomel in small doses, with opium and leeches over seat of inflammation, his stomach was quiet, the tenderness subsided, and the temperature fell from 102° F. to 99° F. One morning, while upon the night-chair, he complained of faintness, and sudden pain in the right iliac region. A blister and hot poultices relieved this. After two or three days he again had sudden severe pain in this region. Dr. Prewitt then saw the case with me. The patient was kept on quinine, morphine, hot fomentations and milk diet. Some improvement took place, but later a severe hemorrhage from the bowels occurred, and the patient never rallied from the consequent prostration, succumbing on the 27th day of his illness. He had had a somewhat similar attack, of less severity, some years before, which his physician had pronounced rheumatism of the bowels.

DR. PREWITT:—I fully concurred with Dr. Scott in the diagnosis and treatment of this case. But it has been my experience many times to find practitioners in similar cases, that is, cases of inflammation in the ileocæcal region, using their utmost endeavors to secure a movement of the bowels, and not content with the use of enemata, resorting to the most active purgatives. Of course there

is constipation, but that constipation is due to local inflammation, not the cause of it. Treatment should be directed to the control of the inflammation and local irritation, when the constipation will readily yield to the mildest laxatives. Active purgatives may effect a movement of the bowels, but they do it at the expense of intensifying the local inflammation and hazarding the life of the patient. What I would lay stress upon is that when called to a patient with pain and tenderness in a fixed region of the abdomen, the existence of constipation is now an evidence of fæcal accumulation, not an indication for the use of active purgatives, but the reverse. Fæcal accumulation, per se, does not give rise to inflammation, and even where this accumulation exists it is not best treated by active purgatives. It would be like corking up the bowels from below, and endeavoring to force out the obstruction by exciting the peristaltic action above. Removal by enema from below first, and laxatives after would be the treatment, so that in every aspect of the case, whatever be the cause of the obstruction, whether it be an intussusception, a local inflammation, or simple . facal impaction, the use of active or violent purgatives is injudicious.

DR. WM. Johnson:—From the history of this case I regard it as one of "typhlitis stercoralis," dependent upon an impacted condition of the colon with fæcal matter. The symptoms in these cases are generally so plain that there can be no mistake. There is a history of constipation; you can often feel the fæcal accumulation in the bowel. The local irritation becomes inflammation, and this may extend to the peritoneum—the whole series of symptoms having their origin in fæcal impaction about the caput coli. To effect a cure you must remove the cause. After the removal of the fæcal matter, opium may be used with great benefit to subdue the inflammation.

Dr. Hodgen:—I think impaction does not occur except where the intestine has become more or less inflamed. There is always a loss of power from some cause. Impaction may occur from simple torpidity of the intestine, but it would not come on as it did in this case. In a healthy person there must be some degree of local inflammation to precede the impaction producing paralysis of the intestine at the site of the inflammation. The proper treatment from the outset would be to allay the inflammation

which causes the paralysis, and thus prevent the impaction.

Dr. Newman:—I think we may have fæcal impaction without previous disease, unless a torpidity of the nervous system constitutes disease. It may be the result of obstinate constipation, or arise from neglect without being

preceded by inflammation.

I am inclined to agree with Dr. Johnson, that the disease arose in consequence of fæcal obstruction leading first to inflammation of the bowel at the site of irritation, then extending to the peritoneum and subsequently involving the liver. The liver, as we know, receives its supply of blood from the abdominal viscera through the portal vein, and the vitiated condition of the blood derived from the inflamed bowel and peritoneal coverings, doubtless led to its involvement.

MICROSCOPY.

"Emigration in Passive Hyperæmia."

BY W. T. BELFIELD, M. D.

Read before the Microscopic Congress at Indianapolis, August 17th.

In March last I had the occasion to superintend the post-mortem examination of a case of pneumonia, in which death had occurred on the tenth day of the disease. There was found consolidations of the entire left lung, gray hepatization in the lower lobe, red in the upper. Nothing peculiar was noticed in the other organs except general engorgement, especially marked in the kidneys. There had been during our observation of the patient not a solitary symptom of renal disease, except the presence of albumen (about ten per cent.) in the urine, a presence known to be common in pneumonia, and attributed to mechanical congestion. For at least three features of pneumonia tend to the production of prethamical congestion, namely, the decrease in breathing surface, the increase in the demand for oxygen made by the excessive tissue change, and the feebleness of the heart's contractions. Hence the albuminuria and the post-mortem engorgement of the kidneys were regarded as legitimate

results of the disease. A happy curiosity, however, led me to make a microscopic section of the kidney. I found the tubules rather smaller than usual, the intertubular spaces and capsules of the malpighian tufts much thick ened by the presence within them of numerous small. round, finely granular cells 1-2,400 1-3,000 inch in diameter. These cells had every appearance of white blood corpuscles, and were so pronounced by Dr. Danforth and others. By way of explanation it was presumed that the retardation of the blood current due to the causes previously mentioned had afforded the colorless corpuscles an opportunity to exhibit their amæboid movements, and that the opportunity had been improved. That this was not an inflammatory process was proved by the absence from the clinical history of all the recognized symptoms of renal inflammation and by the absence from the urine of the exudation cylinders or tube-casts. Nor were the microscopic appearances of the organ those of inflammation.

Within six weeks I had an opportunity of examining the kidneys of two other patients, dead from pneumonia. without previous history of renal disease. In each case the urine contained a small quantity of albumen, but no casts, and in each case colorless corpuscles were found in abundance in the intertubular tissue, and in the malpighian capsules. At a meeting of the West Chicago Medical Society, held June 10, I exhibited a section from one of these kidneys, and another from a normal kidney, demonstrating to the satisfaction of those present the existence within the connective tissue of the former organ of the small round cells above described. At that time I sought unsuccessfully for literature, or a reference to literature on this subject. However, deeming the fact, if it were a fact, of the migration of leucocytes in passive hyperæmia a very important one, pathologically, I determined to investigate the case, and for that purpose instituted the pro-

On June 19, I curarized a frog, cut down in the femoral vein (which can readily be done without injuring the artery, as in this animal the vein and artery lie on opposite sides of the femur), made compression by means of a rubber band and a plug of cork, and stretched the web of the corresponding foot on the stage of the microscope. I employed a Hartrack No. 4 objective, and a Gundlach C periscopic eye-piece. By watching the blood movements

ceedings about to be narrated.

I easily regulated the pressure so as to retard, more or less completely, the onward movement, avoiding complete stagnation. After considerable compression had been exerted, as was shown by accumulation of blood-corpuscles, distention of the veins and retardation of the current, the field was carefully watched for nine hours. During that time no leucocytes were actually observed to leave the vessels, yet several were seen just external to the walls, having apparently escaped unnoticed during the shifting of the stage. For the next ten hours the field was not observed with sufficient care and frequency to warrant any assertion of migration. At the end of this period, however, that is, nineteen hours after compression was made, an almost continuous observation of the field was begun. From the nineteenth to the thirty-sixth hour leucocytes were observed to leave the vessels in considerable numbers. the shortest time of exit observed being twenty minutes -the average, one to two hours. The method of locomotion did not, of course, differ from that exhibited in inflammation, though at no time did I observe the excessive change of form and protrusion of long processes figured in the books. There was frequently a flattening of the leucocyte against the wall; then the appearance of a bud external to the wall; then the gradual enlargement of this bud, and shrinkage of the intra-vascular portion—the part piercing the wall being apparently a tunnel through which the rest of the body passed. Often the locomotion was continued after the leucocyte had become wholly extra-vascular, so that it traveled several times its own diameter from the place of exit. It was noticed, too, that other corpuscles were prone to pass out at the particular point of previous immigration, so that sometimes several would be crowded together along the vascular wall, and an hour later would be in close proximity external to the vessel opposite the same point. This phenomenon occurred usually not in the minutest capillaries, but rather in the large capillaries and small veins, ranging from 1-1,500 to 1-1,600 of an inch in diameter. Nor were the passages always made where the current was slowest, nor where the vessel gave evidence of greatest engorgement by the crowding of the corpuscles, as emigration from a rapid current, but sparsely supplied with corpuscles, was not infrequent.

Before I had watched the process a great while, I be-

came aware that the colorless corpuscles were not the only bodies exhibiting amæboid movements. I observed that certain red ones, without nuclei, of circular shape and small size (1-2,500 inch in diameter), performed the same movements, with as great celerity as did the white. (The listener is reminded that in the frog the perfect red corpuscle is of elliptical shape, is 1-1,200 inch in its longer diameter, and has a distinct nucleus: while the white globule is, when at rest, of circular shape, its diameter only about i-2,500 inch.) There could be no possibility of confounding these small red ones with the white, for although in size, shape and movements they were identical, the red color of some was unmistakable. So extensive was the locomotion of the red ones, that at the thirty-sixth hour of the experiment there were numerous red patches in the field, which looked almost like hemorrhages. That they were not hemorrhages I knew; first, because there were no large oval corpuscles, the red globules proper, but only the small circular ones; second, because they were fixed in the tissue, not floating to and fro in the blood serum; third, because I had seen many of them migrate.

These phenomena were witnessed not by myself alone. Dr. Bridge (Lecture on the Practice of Medicine) observed the emigration of several corpuscles; Dr. Danforth, Professor of Pathology and Pathogenesis, while enabled to watch the process for a considerable time, was convinced emigration actually occurred; Miss Meigler observed numerous red as well as white cells leave the vessels.

Having established the fact of locomotion, therefore, it remains to prove the dependence of that locomotion upon mechanical congestion rather than upon active hyperæmia. That congestion existed was shown not only by the retardation of the blood current and dilatation of the vessels, but also by odema of the web, which became evident within twenty-four hours. That the congestion was not "active" was established by two facts: first, the absence of all the phenomena of inflammation other than the amœboid movement. i. c., the primary acceleration of the blood current, the subsequent retardation with irregular contractions of the vascular walls; second, that the discontinuance of the pressure on the vein was at once followed by complete restoration of the circulation in the web, whose irregularities, therefore, were dependent wholly

on a mechanical impediment, and not upon any "nutritive

irritation" nor vascular spasm.

This experiment has been repeated twice since the above date. In both instances emigation occurred; in one it began within three hours after compression was made. In this case the pressure exerted exceeded somewhat that made in the first instance.

Now, the value of these facts depends upon one's ideas of pathogenesis. If he believes, with Billroth, that connective tissue is developed solely from migrated blood corpuscles, he has a key at once to the connective tissue hyperplasia of the skin and venous walls which accompanies a varicose condition of the veins. For the mechanical congestion necessarily present must result in the emigration of blood corpuscles into the surrounding tissues, and these are developed, says Billroth, first into spindle cells, and finally into complete connective tissue corpuscles, causing the familiar thickening of the skin and vascular walls. In support of this view is the fact that the increase in thickness in the walls of a varicose vein is due to hyperplasia, not of the muscular elements, but of the connective tissue bundles interposed among those elements, and of the outer coat of the vessel, which is composed wholly of connective tissue. So, too, the enlargement of the spleen, which usually follows portal obstruction, as in cirrhosis of the liver and the thickening of the superior hemmorrhoidal veins—"hemorrhoids"—from the same and other conditions, are to be referred, in part at least, to the development of leucocytes which have wandered from the vessels during the mechanical congestion. Perhaps, too, the areolar hyperplasia so often found with displacements of the uterus, is due to the venous congestion which usually exists in that condition.

Even the conservatives, like Stricker and Rindfleisch, while insisting on proliferation of pre-existing cells as the more important source of connective tissue hyperplasia, admit the strong probability that a considerable part of it is due to the development of the wandering cells or colorless corpuscles first into the spindle cells, then into fibrillated tissue. Certain it is that in the repair of wounds, at least, they play a prominent part in the formation of

cicatricial tissue.

The fact of emigration without any evidence of that "nutritive irritation" of tissue which Virchow presumes

in active hyperæmia would seem to favor Henry's view that the exit of corpuscles is a passive rather than an active movement due to their glutinosity, to increased blood pressure and diminished blood velocity—in short, a sim-

ple filtration of colloid substances.

Then, again, the behavior of the small red corpuscles is interesting as exhibiting their close relation with the white, and as furnishing another link in the chain of circumstantial evidence that the red corpuscles are transformed white ones. Such has for some time been the prevalent opinion, though never completely demonstrated. The fact that the red ones were but little, if any, larger than the white, that they were of circular shape, were devoid of nuclei, and possessed the power of amæboid motion. proves their close connection with the colorless cells; while the presence of hæmoglobin, as indicated by their color, testifies to their ability to perform at least one important function of the fully developed red ones, namely, the transportation of oxygen.

Upon further examination of the literature of this subject I find in Wagner's Pathology (p. 188) Charlton Bastian cited as authority for the statement published in the British Medical Journal, for 1868, that "red globules as well as white leave the vessels in venous stages, scorbutus, etc., by means of amæboid movements." Not having had access to the Journal I do not know upon what observations he based his statements, nor whether he had made

investigations similar to my own.

Angular Aperture.

Ir could not be expected that a conclave of microscopists could take place without the subject of "Angular Aperture" being introduced. As a matter of course it came up during the sitting of the National Microscopical Congress, just held at Indianapolis. On the morning of the second day, Dr. Geo. E. Blackham, of Dunkirk, N. Y., read a paper upon the subject. In lieu of the paper itself, we here give a synopsis of it as taken from the Journal.

"The Doctor began by stating that the primary function of a microscope object-glass was to gather up rays of light from an object which would otherwise diverge too widely to be received by the eye. These rays were then brought to a focus, in which an enlarged and brilliantly illuminated

image of the object was formed, and which could then be examined by another magnifying-glass called the eye piece. He defined angular aperture to be the angular distance of the outside rays of the widest pencil of light which the object-glass could so gather up and bring to a focus, with the formation of a well-defined image of the object. He stated that the larger the pencil of rays which an object-glass could thus utilize, or, in other words, the wider the angle of aperture, the better the glass, and briefly reviewed the history of recent improvements of the microscope, showing that as the instrument has been improved the angle of aperture has been steadily increased, till at last the limit of 180 degrees of air angle had been reached. He then reviewed and criticised the various methods devised by Mr. Wenham to measure the angle of aperture. He objected to using the microscope as a telescope to view distant objects while measuring the angle of aperture, and gave it as his opinion that the only true way was to measure the angle while the microscope was in actual use, carefully focused upon an object in the center of the field, and with all conditions so adjusted as to give the best possible definition of the object. He illustrates his method of measurement, exhibiting a beautiful microscope made expressly for him by Mr. R. B. Tolles, of Boston, and provided with special appliances for this kind of work. In conclusion, he spoke of the superiority of well-constructed object-glasses of extremely wide angle over the best of those with narrower angles; instancing the fact that such test objects as the nineteenth band of Nobert's testplate, consisting of 112,594 lines to the inch, ruled upon glass, and the lines upon Amphipleura Pellucida, the No. 20 of Moller's Balsam-mounted Probe Platte had been resolved by his Tolles 1-6 of 180° air angle."

In the afternoon, a Mr. Hitchcock, of New York City, read a paper upon the same subject, which was followed by considerable discussion, carried on principally between Mr. Hitchcock and that eccentric and funny gentleman, Prof. J. Edwards Smith, of Cleveland. Mr. Hitchcock, like a good many distinguished men, has a very considerable element in his character of egotism. We do not, however, hold him in any disparagement on that account. In fact, we rather like a smart man who gives you to understand that he is such a one, providing he does not transcend proper limits, or think every one else is a fool. During the discussion, Mr. Hitchcock, prompted (it must be by his vanity), moved the adoption of the following preamble and resolutions:

"Whereas, The subject of angular aperture of objectives has been discussed for many years without great benefit to science, or showing even now a fair prospect of a satisfactory settlement; and

"WHEREAS, We believe that much of this discussion has sprung from

the undefined meaning of the term; and

"Whereas, We, representing in this National Microscopic Congress the various societies and classes of microscopists in the United States, believe that by recommending and adopting a definite meaning for the term can advance the interests of true science; and

"Whereas, In the present state of our knowledge of objectives we see no indication that the capacity of an objective to resolve line tests depends upon its angular aperture, as distinguished from other optical qualities apart from workmanship; we therefore adopt the following resolutions:

"Resolved That we adopt the following as a definition of angular aper-

ture as applied to the objectives used with the microscope:

"The angular aperture of a microscope objective is the angle at the apex of a triangle, having a base equal to the available diameter of the front lens, and a height equal to the actual focal length (working distance), measured in air for a dry lens and in the fluid employed for an immersion, the collar being adjusted for the most perfect definition in every case.

"Resolved, That we request all makers to mark their objectives in future

to correspond with the definition above adopted.

"Resolved, That this preamble and resolutions be distributed in circular form among the various societies and makers of objectives, with the request that they give it their formal approval and communicate whatever action they may take as the Congress may appoint,

"Resolved, That we recognize that the interposition of cover glass, balsam, or any other medium of a different refractive power from the one for which the aperture is given, has more or less effect upon the aperture

and image, and we recommend this as a subject of investigation.'

Mr. H. urged with great earnestness that the Congress should take action in defining the meaning of angular aperture. He said that the eyes of all microscropists were directed toward this Congress, hoping that it would settle a number of disputed subjects in microscopy, and, therefore, that they should not be disappointed. If angular aperture should be defined, he urged, the definition, without doubt, would be accepted by the microscopists not only of this country, but also of Europe. But the Congress saw the absurdity of complying with Mr. H.'s wishes. They saw that to do so would be to make themselves the object of ridicule. A score and a half of very clever gentlemen, scarcely one of whom was an individual of acknowledged erudition, could not possibly carry with them sufficient weight as to unquestionably settle any matter in an attempt at defining. All that would be demonstrated would be the possession of an overweening vanity on their part: and microscopists would still go on disputing as to what constituted angular aperture. The motion, therefore, met with no second, and was quietly withdrawn.

The Indianapolis gathering, however, being a success in demonstrating that a National Congress could be organized with profit to its members, it may be that the gentlemen who assemble next year in that capacity, in Buffalo, will be of such attainments that whatever in consequence of its nature can only be a dogma, and is not subject to any scientific investigation, they will be able through their combined influence to set at rest by issuing a bull upon it. It is only under such circumstances that bulling can avail anything—that the organization that undertakes it be large, with many men of acknowledged

learning composing it, and the subject be but an arbitrary

matter, a mere dogma as it were.

Mr. Hitchcock, his resolutions failing to be acted upon by the Congress, exhibited his confidence in their correctness by reading the following challenge. It would seem by having the challenge ready prepared that he at least anticipated their non-adoption, if he did not the refusal of the Congress to consider them at all. The challenge was not accepted, but he succeeded in burning some incense to the little egotism of his nature to which we have alluded:

I challenge any man who is ready to champion the side which claims the angular apertures of 180° and plus 180° as possible apertures, to step before this audience and demonstrate by diagrams the following propositions:

1. That light at an angle of 180° can enter an objective.

2. That a balsam angle of over 82° can be employed with any objective, without special arrangements for illumination. Unless this can be demonstrated, I maintain that the high balsam angles do not depend upon the aperture of the objective, but upon substage accessories.

3. That an objective can take in light theoretically or practically infinitely near 180°, either dry or immersion.
4. That the terms 180° and plus 180° have any definite scientific meaning, or rest upon any basis of scientific accurary. Unless they do, I maintain that they should be thrown out of scientific literature.

5. Whoever may accept this challenge must agree to reply to such questions as may be asked, and the whole of his argument must be reported by a stenographer for the Congress.

If this challenge is not accepted I shall feel at liberty to ignore the claims of my opponents in future.

Dr. Ward, of the American Naturalist, said that while he to some extent sympathized with Mr. H., his opinion was that the Congress could not afford to put itself upon record on a question as to which there is such a wide difference of opinion among scientific men.

Glycerin Objectives.

THE Bausch & Lomb Optical Company, of Rochester, New York, exhibited at the Indianapolis Congress a number of objectives in the construction of which glycerin enters. They have been recently invented by Mr. E. Gundlach; but Messrs. Bausch & Lomb claim to have purchased the letters patent, and that they only, consequently, have the right to make them. The improvement relates to the cover adjustment, and is described, as follows:

It is a fact well known among microscopists, that the

thin glass used to cover microscopic objects refracts the light so as to seriously disturb the microscopic image

formed by the object-glass of the microscope.

The effect of this disturbance, caused by the interference of the cover refractions with the corrections of the aberrations of the object-glass, is the greater, and therefore the more annoying, the greater the magnifying power of such object-glass, and for this reason the more delicate must the adjustment for the corrections of the aberrations necessarily be. The present mode of overcoming this difficulty consists in mechanical means for increasing or diminishing the distance of the front lens of the object-glass used, from the other lenses composing the system, or of the posterior lenses from each other. This method fulfills its purpose only within narrow limits, while beyond these, various secondary faults appear which seriously deteriorate the performance of even otherwise most excellent objectives.

The cause of this imperfection lies in the circumstance that the change in the relative distance of the lenses composing the objective, by which the adjustment for cover thickness is at present sought to be effected, affects principally the chromatic aberrations, while the optical influence of the covering glass preponderatingly disturbs the correction of the spherical aberration. For instance, if both aberrations of an objective are corrected in the best manner for such rays as are reflected from an uncovered object, these rays will, as soon as the object is placed under a cover glass, suffer from a spherical over-correction, corresponding to the thickness of the covering glass—in other words, the rays passing through the peripheral parts of the object-glass intersect at a greater distance from the object than those passing through the central part of it. while the chromatic aberration is scarcely affected by it. In the adjustment for cover thickness at present in use, however, the relations of the aberrations are exactly the reverse, for by moving the front lens away from the other lenses of the system the object-glass will become more chromatically than spherically over-corrected. An objectglass, therefore, which has been properly corrected for medium cover thickness, for instance, can by means of this adjustment be adjusted so far only as to correct either the spherical aberration absolutely, and leave the chromatic aberration under-corrected, or, in the most favorable

case, under-correct the chromatic aberration and overcorrect the spherical aberration in such a way as to leave of both remnants of equal value. Besides this, the distortions, spherical as well as chromatic, are only at a minimum when the lenses are at a certain relative position to each other, and as in objectives of high angular aperture these defects can in any case not be quite removed, the extreme position will so increase them as to make not only the distortion and color appearance at the margin of the field unpleasantly apparent, but to interfere seriously with the definition.

Furthermore, the changing of the relative distances of the lenses composing the object-glass seriously disturbs the focal relation of these lenses, causing a change in the magnifying powers of the object-glass which interferes seriously with micrometric measurements.

The new cover adjustment for object-glasses, here described, obviates all these difficulties. It consists in the following arrangement: Before the front lens of the objective a transparent disk with parallel sides is placed, capable of being moved by some mechanical means closer to or furthur away from the front lens.

In the space intervening between this disk and the front lens there is interposed a transparent fluid of a refracting power equal or nearly equal to that of glass, and it is evident that, by increasing or diminishing the thickness of this layer of refracting fluid, a direct compensation for the increased or decreased thickness of the glass cover of the object, and consequently of the aberrations, may be obtained, without disturbing the focal relations of the lenses of the object-glass, thus avoiding the increased distortions, and the disturbance of the magnifying powers of the objective consequent upon and inseparable from the disturbance of the focal relations of the lenses composing the system of the object-glass. This increase or diminution of the thickness of the layer of transparent fluid is obtained by moving the disk toward or away from the front lens of the system.

The advantages of this arrangement are obvious, and we hereby summarize and recapitulate them; they are as follows: 1. The adjustment exerts no deleterious influence on the corrections of the aberrations, and is equally as efficient for any thickness of the covering glass as for uncovered objects. 2. The working distance is the same

for any cover thickness except for immersion objectives; for this reason objectives of very short working distance will, with this adjustment, admit of even the thickest covering glass. 3. The magnifying power is unchanged. 4. The image is placed but slightly out of focus by this adjustment. 5. The adjustment is very sensitive, thereby facilitating the exact rectification. 6. It can very easily be so arranged that the graduations on the adjustment rim indicate exactly the thickness of the cover. 7. Any casual and unavoidable defect in the movement of the adjustment has no influence on the centering of the objective, as any lateral displacement of the parallel disk causes no optical change whatever.

We also make the same objectives with the inner motion. This has the advantage that the disk remains

stationary.

The fluid between the front lens and the transparent parallel disk is glycerin, which has so far answered all expectations in a most satisfactory manner. Objectives made seven months ago have been sent long distances by rail without impairing their efficiency, and without loss or renewal of the glycerin. They might perhaps be used for years without the presence of any fluid being suspected. This new adjustment is applicable as well to immersion as to dry working objectives. It deserves to be mentioned, that for immersion objectives the advantages of equal working distances for every cover glass thickness do not exist. It is, however, the reverse of what it is with the old adjustment, as the working distance will be the further the thicker the covering glass happens to be.

The object-glasses made by us, in accordance with the above described plan, are so arranged that the portion holding the parallel disk, which forms the receptacle for the glycerin, can be easily detached. This will be found very useful in case the lenses or the glycerin should from any cause become unclean or cloudy.

BOOK NOTICES.

AN ILLUSTRATED CATALOGUE OF MICROSCOPES AND OTHER SCIENTIFIC INSTRUMENTS. Manufactured by R. & J. Beck, London, England, and 921 Chestnut Street, Philadelphia. 1878. 8vo. Pp. 135.

Last month we noticed the catalogue of James W. Queen & Co., of Philadelphia, which is of about the same size as the one before us. We drew attention to the fact that J. W. Q. & Co., in their present catalogue and in previous ones, state that their microscopical department, for a number of years, has not been under as good management as the importance of that branch of the optical science demanded; and then we proceeded to say that "still alleging that the microscopical department is just only commenced to be managed as it ought to be, it seems to us that purchasers will begin to think that, before making purchases of microscopes, objectives, etc., they had better wait awhile, or until they have been assured that it has been for some time properly conducted." But so far as a mere catalogue is a criterion to judge of the condition of a house, the house of R. & J. Beck is in first-class condition.

The work gives very full descriptions of the many excellent, beautiful, and useful optical instruments made by R. & J. B. Those having a copy will regard it valuable as a book of reference, and will file it away for the purpose. The house of Beck has for a long time held a foremost rank in England for its fine optical instruments. They have not their superior in the world. Their large best binocular microscope stand is second to none, unless it be to the magnificent "Centennial" of our own Zentmayer, of Philadelphia, in which is combined every scientific improvement up to the present time, making it a masterpiece of art which it is impossible to excel.

Scientists will be pleased to know that the Becks have opened a branch of their house in Philadelphia under the management of Mr. W. H. Walmsley.

ON THE THERAPEUTIC FORCES: An Effort to Consider the Action of Medicines in the Light of the Modern Doctrine of the Conservation of Force. By Thomas J. Mays, M. D., member of the Luzerne County Medical Society, etc. 12mo. Pp. 143. Philadelphia: Lindsay & Blakiston. Cincinnati: R. Clarke & Co. 1878.

The author of this little book does not believe that the action of medicines is governed by more or less capriciousness, and can never be referred to or formulated into any precise law or principle. He believes that the action of medicines in the animal body is, like everything else, amenable to unchanging laws. He is of the opinion that

every phenomena in nature must be viewed as the effect of force, and can only be interpreted intelligibly when reduced to the terms of the latter. Therapeutics he regards as being a part of the grand chain of natural phenomena, and just as legitimate as those of physiology, or

any of the other concrete sciences.

The physician will find this a really useful work. It does not consist, as might be supposed from its title, of mere theoretical discussions, in which theories are advanced that can be neither proven or disproven, novel in their character may be and ingenious, but incapable of being made of practical value. On the contrary, remedies and their actions are explained in a philosophical manner, guided by experience and the acknowledged teaching of chemistry and the other collateral sciences. A careful study of the work can not but result in doing away with a great deal of empiricism in prescribing and bringing about a more scientific and intelligent treating of diseases. We cordially recommend it to our readers.

Anatomy, Descriptive and Surgical. By Henry Gray,
F. R. C. S. With 522 Engravings on Wood. The drawings
by H. V. Carter, M. D., and Dr. Westmacott. The dissections jointly by the author and Dr. Carter. With an
Introduction on General Anatomy and Development.
By T. Holmes, M. A., Cantab., Surgeon to St. George's
Hospital, etc. A New American from the Eighth and
Enlarged English Edition. To which is added Landmarks,
Medical and Surgical. By Luther Holden, F. R. C. S.
Surgeon to St. Bartholomew's Hospital, etc. 1878. 8vo.
Pp. 983. Philadelphia: Henry C. Lea. Cincinnati: R.
Clarke & Co.

This most magnificent work upon Anatomy has reached another edition. It is beyond question the finest work in the English language, or any other language. There is no

other work to be compared to it.

The work has been so long employed as the principal text-book in our medical schools that a description of it is quite unnecessary. Of other features that give it a superiority is its correctness in the descriptions and illustrations. It may be said to be absolutely correct. An improvement peculiar to it is having printed upon the cuts the names of the parts exhibited upon them instead of referring by letters to a note underneath.

The division upon "General Anatomy" is worth double

the price of the work. The microscopist here will find a very full description of minute anatomy—superior to what he will generally find in histological works. Commencing with the blood, then is described the lymph and chyle, with the cells peculiar to them. Then all the tissues are described—their microscopic characteristics given. The microscopist in human histology will have this part of the work constantly before him.

In conclusion we will say that Gray's Anatomy is a

complete treasury of anatomical knowledge.

ATLAS OF SKIN DISEASES. By LOUIS A. DUHRING, M. D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania, etc. Part IV. Philadelphia: J. B. Lippincott & Co. Cincinnati: R. Clarke & Co. 1878.

Part IV., the Part before us, has magnificently colored plates, after life, of Vitiligo, Alopecia Areata, Tinea Favosa, Eczema (Rubrum). After each plate follows a succinct, but sufficiently full, description of the disease, with an account of the treatment best adapted for it. This Part, with its splendid plates, setting forth the various affections in their natural colors and connected with these the treatises alluded to, forms a very valuable con-

tribution to the literature of dermatology.

This Atlas of Skin Diseases is published in Parts. Price \$2.50 per Part. The Parts are in size very large quarto, or, in length and breadth somewhat greater than a school atlas. To quote from the Medical and Surgical Reporter: "The plates are admirably executed, and with a fidelity to the natural appearances that is striking. The advantages of such faithful reproductions are most obvious, for no amount of verbal description can convey a true idea of these eruptions. These illustrations are all from life. nearly full size, and chromo-lithographed in the best manner."

Each plate has been taken from an individual suffering with the disease, and is not an ideal picture.

Berberidace. The Botanical Description, Commercial History, Medical Properties, and Pharmaceutical Preparations. By C. G. and J. U. Lloyd. Smo. Pp. 16.

The title-page of this pamphlet of a few leaves embodies quite fully its character. Messrs. H. M. Merrell & Co., druggists, of this city, who deal in new remedies, preparing them for dispensing, keep on hand, we believe, the preparations of the Berberidaceæ, and this

pamphlet can be had of them by inclosing a postage stamp to pay for the postage.

EDITORIAL.

The paper of Dr. Belfield causes the "Microscopical Department" to occupy an unusual number of pages; but it is not to be regretted, as the paper will be bound to be of the highest interest to every one interested in pathology, whether a microscopist or not.

THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES will hold its tenth annual meeting at Boston, Mass., commencing Tuesday, September 10, 1878, at 10 A. M., in Union Hall. A very important meeting is anticipated.

YELLOW FEVER.—This most dire plague has been prevailing for some time to a fearful extent in our Southern cities. At the time of our writing, its force has not been weakened in the least, but is rather increasing. Some of the smaller towns have become almost depopulated by the frightful mortality that has occurred in them, and the stampede of the citizens from them. Along the Mississippi above the towns afflicted, and along the Ohio River, a strict quarantine is maintained to ward off the disease from the Northern towns. Under the charge of Dr. Minor. the health officer, a very strict quarantine is maintained at Cincinnati. Although the strictest precautions are taken against the admission of persons afflicted with the disease into places where it is not prevailing as an epidemic, vet most physicians, we believe, do not regard the disease as contagious. A specific disease, it is produced by a specific poison, and can only exist where the poison is being constantly generated; in such localities it prevails as an epidemic, and an individual is liable to contract it whether he has been exposed to the disease or not.

Dr. John W. Woodworth, Surgeon General U. S. Marine Hospital Service, has sent us a circular letter in which he gives a summary of his observations in regard to the disease. As it contains some points of interest we quote for

the benefit of our readers:

"The weight of scientific evidence seems to warrant the conclusion that yellow fever is produced by an invisible poison capable of self-multiplication outside of the human organism which it enters through the air-passages. The poison germ or miasma is a product of the tropics. In this country yellow fever has prevailed in most of the Gulf and Atlantic cities, and in many of the towns along the Mississippi River. In some instances it has been carried

inland with the people fleeing from infected localities, but it has never shown a disposition to spread epidemically at points remote from the continuous water-road of commerce, or to lodge in high salubrious places. The cities of the Great Lakes have always been free from the disease. Yellow fever can not be said to be endemic in the United States, from the fact that in some years it does not appear, though the imported germ undoubtedly survives the mild winters. It appears to have about as much resistance of cold as the banana plant; when the banana stalk is killed down by the frost, the yellow fever does not recur until again imported. The germ is transmissible. It is capable of being transported in the clothing or personal effects of passengers and sailors, but its spread from one city to another is chiefly accomplished by vessels-their damp, filthy holds, and bilge water being its favorite lurking-places. Confinement, moisture, and high temperature favor the multiplication or virulence of the poison. When a wharf, or spot of ground, or a house becomes infected, the poison at once commences to spread, creeping slowly in all possible directions, continually enlarging the area around the center of infection unless checked by disinfection, as has undoubtedly been done by the use of carbolic acid in New Orleans in former outbreaks. Yellow fever is not communicated from the sick to the well: the sick and well being dangerous only as possible carriers of the poisonous germ or miasma. In support of this assertion it may be stated that at quarantine hospital where the effects of vellow fever patients are burned, or otherwise thoroughly disinfected before the admission of the patients, the attendants do not contract the disease. This has been demonstrated many times. All well persons whose effects have been disinfected may be considered harmless after six or seven days have elapsed from the time of leaving an infected district or vessel, as the period of incubation of the disease lasts from two to six days. This simplifies the question of quarantine—absolute land-quarantines being deemed impracticable—and indicates the direction of preventive measures to the vessel, cargo, or the locality, if the poison have found lodgment on shore. A vessel may escape infection if kept clean and dry, and all parts capable of being closed are frequently subjected to the fumes of burning sulphur, and the men employed on board are compelled to bathe and change their flannels daily, and not allowed to sleep on deck or in the hold of the vessel. There is an example of a ship

trading between Havana and New York, upon which these precautions have been enforced for a period of twelve years, and not a single case of yellow fever has occurred on board. Though not sufficiently demonstrated to state as a fact, still there seems good reason to believe that much may be accomplished by individual prophylaxes—by the use internally of small doses of sulphate of quinia, at regular intervals, and of tincture of iron and chlorate of potassa. As the poison enters the system through the air-passages, it has been suggested that the nasal passages be bathed frequently with a solution containing quinine to be applied by means of a nasal sponge."

NATIONAL CONGRESS OF MICROSCOPISTS.—As had been announced in the Medical News, a National Congress of Microscopists was held in Indianapolis, beginning Wednesday, August 14th. The meetings were held in the Criminal Court Room of the Court House, whether because the city contained no public hall that was available or not we do not know.

We were disappointed in the small number of microscopists that were in attendance, there being only about thirty, including several makers and dealers in microscopical instruments. It was also to be regretted that there were so few present of distinguished workers at the tube. Although all were very clever gentlemen, who have been exhibiting a praiseworthy interest for some time in the animate and inanimate objects that exist in the almost as yet entirely unexplored world beyond the unaided vision, and not a few of them have acquired considerable celebrity, yet there was a marked absence of those of acknowledged learning and eminence in microscopy. From the cities of Boston, New York, Philadelphia and Washington we did not notice a distinguished gentleman. From the State of New York, however, we were pleased to meet with Drs. Ward and Blackham.

But barring the facts that the number present was small, and that there were but few present of distinguished microscopists, the meetings were exceedingly pleasant and interesting, and will bear fruit in the way of begettting a general interest in microscopy. We venture to assert that not a few will be induced to become votaries of the microscope through this assemblage, who otherwise would probably have never have their attentions attracted to it.

The newspapers gave very full reports of the proceedings, and many citizens manifested their satisfaction in them by

their daily attendance. Everything, indeed, augurs well for the permanent organization which it was agreed upon to form. What success was met with at Indianapolis will give confidence in the future; and we would not be surprised if next year at Buffalo a large and distinguished body of microscopists would be assembled together in congress. It was probably because it was apprehended that the attempt at holding a congress at Indianapolis would be an *entire* failure that so few ventured to leave their homes to attend it.

On Wednesday morning, August 14th, the Congress was organized by electing Rev. J. W. Hervey, of Troy, N. Y., Temporary Chairman, and Mr. H. F. Atwood, of Chicago, Temporary Secretary, Rev. Mr. Cleaves offered a brief opening prayer. Mayor Caven delivered an address of welcome, stating that it was with very great pleasure that he extended the most cordial welcome, in behalf of the city. to the gentlemen of the convention. He recognized fully the importance of the subject which they had met to consider, and said that the vast influence of the study and use of the microscope in the interest of science could scarcely be appreciated. He expressed the hope that the anticipations of the gentlemen present, in regard to effecting a permanent organization, might be realized; and whenever they should next desire to visit Indianapolis. they might feel assured of a hearty welcome.

After the Mayor had concluded, Dr. Orpheus Everts, Superintendent of the State Insane Asylum, who had been chosen by the committee of local scientists to make an address of welcome in their behalf, was called forward and made an address containing flights of the most astonishing eloquence. He exhibited what a doctor could do in oratory when the occasion required. In expressing astonishment that a congress of scientists should meet at

Indianapolis he got off the following rhapsody:

That it should meet here, in this new field, wrested from the wild beast and the savage within our memories, is an additional testimony to the catholicity of science, whose domain is not limited to states or continents, but is wherever matter is and mind can penetrate. Where cities teem, or pathless forests grow, where miners delve, or harvest songs are sung, where insects flit, or monsters cleave their way, where nameless islands fleck the unnamed sea, where stars imagined orb imagined suns; all depths, all heights, all breadths, and all expanse, all things created, and all things to be, these are its empire, and its subjects, all!

A Committee on Permanent Organization having been appointed, by their recommendation the following gentlemen were appointed permanent officers: President, Dr. R. H. Ward, of Troy; Vice-Presidents, Prof. J. Edwards

Smith, Cleveland, and Dr. W. Webster Butterfield, Indianapolis; Secretary, H. F. Atwood, Chicago; Treasurer,

Dr. J. B. Marvin, Louisville.

President Ward briefly responded for the entirely unexpected honor placed upon him, and expressed his determination to do all in his power to make the Congress a

thorough success.

The reading of papers being declared in order, the Secretary read a paper prepared by W. A. Rogers, of Harvard University, which described in a very learned and elaborate manner "The Limit of Accuracy in Measurement with the Microscope," The paper concluded as follows:

I think we may safely draw the following conclusions from this inves-

tigation:

1. Two equally skillful observers can measure the same space within about one-300,000th of an inch if the space does not exceed one-500th of an inch. For a space of one-100th of an inch the deviation will probably amount to one-80,000th of an inch in case the measurements are made with an eyepiece or a filar micrometer.

2. The average deviation for accumulated errors, under similar conditions, is not far from one-50,000th of an inch for eleven intervals. For a large number of intervals the deviation will be somewhat larger, but it will

not be proportional to the number of intervals.

3. A single observer can obtain an agreement with a normal equation representing all the observed values as far as a solution by least squares can represent them, within somewhat smaller limits than those obtained by

comparing the results obtained by two different observers.

During the four days the Congress was in session quite a number of papers were read, some of which exhibited considerable learning and much research on the part of the authors. One of the papers we publish in our Microscopical Department, which will be read with interest by all of our readers whether microscopists or not. At a future time we will print other papers that were read.

There was an oversight in not affording facilities for the exhibition of interesting specimens brought for the purpose. A dentist of Cincinnati took with him a score of slides to illustrate some scientific points or other, but he found no opportunity to make use of them. There were also other instances of disappointment that came to our knowledge. The dealers in optical goods had too much of the monopoly of all the facilities for exhibition. We have no charge to bring against them, for an enterprising merchant feels it to be his duty to improve all opportunities, but it seems to us a little intelligent management would have given them full facilities without yielding to them the monoply. The Congress not being able to meet Thursday evening at the Court House, a source was held in the two parlors of the Grand Hotel, both of which were not as large as an ordinary private parlor. These

were overcrowded, and it was difficult to move around in them. Very early in the evening the three or four tables were filled with the microscopes and samples of the dealers. But perfection can not be expected, and we have no doubt the local managers done their best to have accommodations perfect. It was impossible to foresee everything and provide accordingly.

On Friday evening a soirce was held at the Court House, but it was for the benefit of the public, and, of course, specimens of very scientific importance was not in order.

The Journal describes this, as follows:

Under the direction of the local committee, of which the most active members were Drs. W. W. Butterfield and Henry Jameson, the arrangements for the soiree were made and successfully carried into effect. President W. H Ward and Rev. A. B. Hervey, and other prominent members of the Congress, greatly aided the committee in perfecting various details, giving the benefit of the experience which they had gained in the management of soirces of a similar nature in other large cities. The tables upon which the various stands of microscopes were ranged extended from the west entrance around three sides of the Criminal Court Room. The display of glasses was the finest ever seen in this city, and one of the most experienced microscopists present stated to the Journal representative that there had probably never before been as many fine microscopes brought into use at any public exhibition in the United States. The "objects" shown were principally of what is known as the popular class of specimens, such curiosities being selected as would be specially interesting to non-scientific observers. It must not be supposed that the gentlemen owning the several instruments exhibited anything more than a very small representation of their several collections of objects.

The committee appointed to consider the subject of permanent organization made a report favoring it, which report was adopted. Buffalo is the place agreed upon to

hold the next Congress.

The Congress, "taken all in all," passed off most pleasantly, and all through was very enjoyable. We do not think that any one regretted his attendance. Whatever drawbacks there were was because of the inability to anticipate and provide against them.

MARRIED—In Cincinnati, July 30th, Henry Ader, M. D., of Somerset, Ind., to Miss Mary Magdalena Ebrenz, of

the former place.

Dr. Henry Ader graduated at the Cincinnati College of Medicine and Surgery the latter part of February, 1876. He has already gained a high standing in the profession in his locality, having represented his Society in the American Medical Association. In marrying a wife he has met the success which follows him in the practice of his profession. We hope that he and his companion may have a long life of prosperity and happiness.

THE

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PRIGINAL CONTRIBUTIONS.

A Few Remarks on Medical Hydrology and Mineral Waters, including the "Bedford Alum and Iron Springs" of Virginia.

BY WM. ALEX. GREENE, M. D., MACON, GA.

At the present time medical hydrology and hydrotherapy are attracting great attention, not only on the part of the profession, but from the people, and in the East has been

made a subject of imperial legislation.

Opinions seldom clash with, or contradict each other so much on any other topic as they do in regard to the curative properties of various mineral waters. But thermal medicine is a matter of appreciation and tact, and has such value as a skillful physician knows how to elicit from the mineral waters. They are simple instruments in his hands, from which to obtain the most advantageous results, and there is as much need of medical advice in using them as there is in the employment of other medicinal agents, which must be learned from experience, analysis, and analogy.

The opinion long entertained in favor of the curative action of mineral waters, whether well or ill founded, is certainly extending in the profession, as well as among the people. A strong proof of this fact we find in the extensive business of shipping these waters to distant sections of the country for the benefit of those who are unable, from lack of money, or physical inability, to visit the springs; and, further, the proprietors of many of these

most valuable springs are preparing an extract, or mass, containing the active principles of the water, and furnishing it to physicians and druggists, accompanied with correct analysis, made by the best chemists in the country, and which can be prescribed with as much certainty and confidence as any medicine in our materia medica, thus preventing the necessity of leaving home, family, and comforts, and to travel thousands of miles to obtain their benefits. Admitting what few will question, that a considerable number of chronic diseases are advantageously treated by mineral waters, to say nothing of their efficacy in various acute disorders, which have been recently conclusively settled, it may be questioned whether any mineral waters extant equal those of the Bedford Alum and Iron Springs of Virginia; whether any afford quantities so copious, springs so numerous, temperatures so varied. elevations and climates for which nature has done so much, and, I might add, been more skillfully and lavishly assisted by art. The efficiency of these waters has been greatly extolled, both by physicians and patients, for more than twenty years, which are confirmed by vigorous medical statistics, and authentic reports from numerous sources.

For the physician, clinical experience and observation constitute the complemental finalty of the chemical history of all waters whatsoever, and the complemental result in regard to these springs are involved in more certainty than in most other remedial waters. Although the value of new remedial agents, which are from time to time reported through the medical press, may often admit of question, there can be no doubt of the great practical importance of the further investigation of the therapeutic action of these remedies, which have long held a place in the confidence and esteem of those who have used and tested them, and of discovering their power in mitigating and curing other diseases, and determining their comparative value over other and similar remedies in the treatment of such affections. The "alum and iron mass," or "essence," as prepared from the celebrated Bedford Springs Water of Virginia, appears to me to be one of these. Among the physicians of its native State who are best acquainted with its curative powers, and others who have taken the pains to investigate and use it, for more than twenty-five years it has been esteemed as a most useful remedy in the treatment of many chronic and

febrile diseases. Entertaining a very high opinion of its virtues, I have for several years prescribed it extensively in a large practice, with the most satisfactory results. But it is in the treatment of all diseases of a malarial origin I have found it most beneficial and satisfactory. The alum and iron mass being tonic, alterative, astringent, aperient, diuretic and anti-perisdic, makes it peculiarly adapted to the cure of these affections. Its remedial influence is often so rapidly manifested in these malarial diseases as to preclude the idea of the effect being owing entirely to any alterative or resolvent action, but seems more rational to refer it to a direct or peculiar influence of the medicine on the nerve centers and the

poison in the blood.

I have for many years used it with marked and unparalleled success in the treatment of hamorrhagic malarial fever, sometimes called miasmatic hamaturea, and am not aware of its having been tried before in the treatment of this much dreaded disease, which of recent years has prevailed to an alarming extent in the intensely malarial regions all over the Southern States. Two months ago (in the June number) in the St. Louis Medical and Surgical Journal, I reported several cases of this disease, detailing my treatment with the "alum and iron mass." As the disease has prevailed again during the summer to an unusual extent, increased opportunities have been afforded for contrasting and testing its efficiency. My former experience and observation have been more fully confirmed. To test the power of the alum and iron mass more fully, I gave it in some cases alone, using an infusion of quassia as vehicle for its administration, premising with a simple cathartic if required. The result was quite satisfactory, though I would not recommend that it be alone depended upon, as there are usually complications to meet and control, which are obvious to the intelligent physician. At same time I would not think of treating a case without it. Its remedial influence in the disease is immediate and decided. Under its use the urine rapidly loses its thick, bloody character, becoming clear and limpid, and the paroxysms are rendered milder, less frequent, and of shorter duration. In fact, by its influence the patient is carried more easily, quickly and safely through the attack than by the agency of any other remedy with which I am acquainted. In most cases I gave it in full doses at the beginning, dissolved in some hot, bitter infusion, repeated every four to six hours, gradually decreasing the dose and lengthening the intervals as the patient improved, and continued through convalescence to perfect recovery. There is no more intractable disease in this climate than the one under consideration, and whose pathology and treatment have been more variously considered, and concerning which there remains more mystery and uncertainty. It has baffled the best skill of our most eminent physicians, and no settled plan of treatment been decided upon. Our text-books on practice contain only a bare mention of the disease, so far as I am aware.

In our intermittents and remittents I also use it—usually after the paroxysms have been interrupted with quinine; frequently even depending on the alum and iron mass for that purpose, when quinine is badly borne or contra-indicated. I also recommend and found it very useful for persons residing in malarial regions, to take daily as a preventive of bilious fever, and for those who are unacclimated while traveling through the malarial regions.

I am sorry that there are, even now, physicians who entertain a projudice against the medicine even with "the lights before them;" because they do not find it mentioned in the United States Dispensatory or sanctioned by the great heads of the profession, and for other reasons. Then let me insist that you cease your projudice against this invaluable remedy, which Nature, in her boundless beneficence, has prepared in her own pharmacy. Such prejudice is unworthy of our godlike science, which looks with equal eye upon all created things and presses them into her service as occasion may require.

The Medical Association at Lynchburg, Virginia, in resolutions adopted at one of their regular meetings, testifies: "That the Extract of Mass, condensed by evaporation from this water, contains in reduced space its curative virtues, and under proper application is just as efficacious." I deem it unnecessary to detail the numerous diseases relieved and cured by this remedy, as careful attention to the analysis and authenticated record of results from the highest sources are sufficient. My principal purpose being to call attention to its value in malarial diseases, especially the one dwelt upon, "hæmorrhagic malarial fever;" and, in conclusion to place on record for what it may be worth, my opinion, formed after much

thought and material deliberation, that the "alum and iron mass," the "essence" or waters of those springs will be found a most valuable adjunct, if not a prime remedy in the treatment of yellow fever, equally as efficacious as it has been found to be in the management of its twinsister-hæmorrhagic malarial fever. I have entertained this opinion for two years, and been very anxious for the trial to be made. The present epidemic now devastating our Southern cities, and which seems unusually virulent and malignant, suggested the writing of this paper; besides, when disease and death are in our land, and hang like a pall of gloom over the heads of the devoted people, and terror reigns supreme in city, village and hamlet, it is a common duty we owe to humanity to contribute all we know or think to enlighten our fellow-mortals. With this object in view, I venture to suggest this medicine as eminently worthy of a trial. I passed through one of the severest epidemics of vellow fever which ever visited any portion of the United States; and with an extensive acquaintance with this severe form of malarial fever, my opinion is certainly worthy of some attention. The fatality of hæmorrhagic malarial fever is fully equal to that of vellow fever, at least when I have witnessed it, until I adopted my present mode of treatment. I have seen in country places an entire neighborhood stricken down (I mean the whites, as negroes very rarely have it), and fully two-thirds of the cases proving fatal in the southern part of Georgia in the year 1870. I should place great reliance on this remedy as a preventive of yellow fever while exposed to its infection, by its action in purifying the blood, strengthening the system, giving it vigor of action, preserving healthy functions, and regulating the secretive and excretive organs, together with its specific action of preventing intermittents. The constituents of those waters I have already given. The unusually large proportions of iron and aluminum are worthy of attention. It was rather a strange coincidence that, while studying and investigating the remarkable good effects of this medicine on our malarial diseases, and trying to account for it, I should be so unexpectedly enlightened as I was only a few days since in perusing a copy of the London Lancet, which furnished just the information I wished. According to Dr. Goolden, of the London Lancet, the "sulphate of manganese" (of which this "Mass" and water

possess a good complement) is a most excellent substitute for mercury in the various bilious troubles. He says in jaundice, hæmorrhoids, and in congestion and inflammation of mucus membranes it has produced most remarkable results. He says further, that the addition of small quantities of epsom salts improves and promotes its good and beneficial action. Now this important constituent may have much to do with the remarkable results I have observed and reported as resulting from the use of this remedy, which I accidentally discovered from reading the interesting paper of Mr. Goolden, of the London Lancet, and which I saw since I began to write this very paper.

It seems to me I have said enough for physicians who have an opportunity to try this remedy both in the treatment of yellow fever and as a preventive to be taken by those exposed to it. So well confirmed am I in my opinion that, but for my family and business, I would at once repair to the field of the disease, to test my theory. I ask most respectfully that those in position for using it, do so at once, both as a remedy and preventive. I have written this paper in great haste to get it published in time for information to those who are so heroically standing in the midst of pestilence and death, to aid their fellow-mortals. May God speed you in your noble and brave work and preserve your lives. I will gladly and promptly respond to any inquiries on this subject from any source.

Proceedings of the Biological Society of Paris.

Translated for the "Medical News" by R. B. Davy, M. D., of Cincinnati, Ohio.

M. Charcot read a communication on hystero-epileptic attacks which present, in the midst of great apparent disorder, a certain regularity of symptoms easily observed by close attention. He spoke of mixed hysteric epilepsy, that is to say, of violent hysteria in which one of the places of the attack takes on the character of epilepsy, and not hysteric epilepsy separately, in which the patient has first hysteria and then an epileptic fit.

In mixed hysteric epilepsy, the attack presents a primary phase, which Charcot calls the epileptic or epileptoid

phase. After this, which varies according to the individual, the patient is seized with an attack which resembles epilepsy in every particular, except that it is immediately arrested by compression of the ovary, or the passage of an electric current from the head to the feet, these phenomena not being noticed in true epilepsy. After this primary phase, a sort of intermission takes place, separaing the first from the second stage. This, which is called the period of contortions, is interesting as much in a historical as a clinical point of view. The patient, seated on her bed, throws herself backward several times in succession, with incredible violence. For the other part, her body assumes the form of an arch, resting only on the head and feet. Finally in this stage the patient assumes the most eccentric and grotesque positions, insomuch that it might be called the stage of clownism. It she is awakened at this time, she commences at once to rave and relate her history, always the same.

The third stage is that of attitudes, depicting the passions. Her look becomes fixed, and expresses now fear, now joy, and now the most marked impudence. It is in this stage that the patient describes love scenes, sees flowers, hears music, and then, passing on to more somber ideas, tells about a murder, sees an enemy, sees

blood, etc.

The fourth stage is what Charcot calls the post-hysteroepileptic stage, or stage of hallucination, during which the patient sees animals, mostly rats, snakes, vipers; in general black animals. After this all is over until a new attack supervenes.

A graphic representation of these symptoms had been arranged, and M. Charcot requested MM. Richer and Regnard to show the tracings to the society and give the

explanations of them.

M. Richer said that the epileptoid stage of the violent hystero epileptic attack was after the fashion of the true epileptic attack. M. Regnard and himself had applied the myograph to the study of external convulsions. On the traces obtained by applying the instrument to the anterior part of the forearm, three phases were easily distinguished. 1st. The tonic phase. 2d. The clonic phase. 3d. The phase of resolution.

1st. The tonic phase is marked by an irregularly undu-

lated ascending line, and followed by a plane which answers to the maximum of muscular contraction.

2d. The clonic phase which follows is represented at first by a very fine dentated appearance, the teeth of which grow in size as the curve falls toward resolution.

3d. Finally, during the stage of resolution or stertorous sleep, the muscle, completely relaxed, is without movement, and the needle of the myograph only makes a

straight line.

To sum up: if the sphygmograph of Marey is applied to the patient's arm, according to Regnard and Richer, there are three distinct stages during the epileptoid stage: A tonic stage, during which the muscle is contracted; a clonic stage, during which the muscle contracts rythmically; and a stage, so called, of extensive movements, during which the contractions are irregular, but very great. With a registering apparatus these three stages have been seen to be always of the same duration. M. Regnard added that the application of the continuous current of electricity during the hystero-epileptic stage always diminished the number of attacks; the interrupted current arrested the attack in general, even after it had commenced. Thus, for example, if an application of forty elements was made to a patient during the attack, and the poles suddenly changed, the excitation of breaking the circuit stopped the attack immediately. M. Regnard has made numerous experiments, and, in only a few cases, have the results been contrary to those which he related. This is then a valuable method, more valuable still than compression of the ovaries which yields good The attacks may disappear never to return, or, what happens more frequently, they grow farther and farther apart, and lose by degrees their intensity.

M. Magnan, comparing the traces to those which he had obtained with M. Frank in epilepsy, produced experimentally in animals, observed that in artificial epilepsy instead of an absolute repose between the two primary phases, as was the case in the traces of Regnard and Richer, there was a dentated line showing a slight persistent

trembling.

M. Paul Bert, on the occasion of the remark of M. Charcot, "that the hystero-epileptic attack presents a certain regularity," observed that he had published long ago the results of his experiments on choreic dogs. If a

registering apparatus was used in the case of these dogs, it was found that the jerks, apparently so irregular, were very rhythmical. The same observations applied then, in this point of view, to hysterics and choreic dogs.

M. Bert afterward made a communication to the society on the oxide of carbon. He has made a series of experiments on this gas, which show that it is not only a poison to the heart, but also to the muscles. It can be said, moreover, in a general way, that the poison most concentrated chemically, attacks the organism at one point, but always ends by exerting a general action over it.

The same gentleman made another communication on the protoxide of nitrogen. Here are the results of his researches and experiments on this agent. Used under tension it is an anæsthetic, which procures complete insensibility. The return to sensibility is effected instantly, two inspirations of air being sufficient to dissipate its effects completely. During the insensibility an absolute integrity of the circulatory system is observed. Finally, it produces no complications in the system like other anæsthetics, this being avoided in proportion to the facility with which it enters and leaves the system.

It is known that fruits preserved in compressed oxygen furnish alcohol. This property belongs not only to the fruit, but to all parts of the vegetable. M. Bert wished to see if that was not a privilege of the vegetable cell, and if, in this point of view, animals would not play the same part. He undertook a series of experiments which conducted him to this conclusion, which he as yet expresses only with reserve; that the cells of the liver deprived of their oxygen by curarization of the animal, are like the vegetable cells, capable of destroying the glucose and yielding alcohol.

M. Leloir sought for nerves in vegetations. In the first place osmic acid was employed which gave a negative result, and as he expected, moreover, the negaline disappeared from the nerves of the inflamed tissues. The absence of nerves with negaline seemed demonstrated to him. The cylinder axes were sought for with chloride of gold, and by the process of Læwin, but none were found. In their stead, however, very beautiful vessels of intense violet color were obtained. Notwithstanding the number of vegetations examined, not a single nervous filament was detected, which makes their presence appear

very problematical. Moreover, he remarked that vegatations are not as sensitive as they are generally believed to be, and that their sensibility is about the pedicle. He recalled the fact that certain tissues almost deprived of nerves (dura mater) are nevertheless sensitive, and that excitation of them, when inflamed, could occasion the

most acute pain, as M. Vulpian has shown.

In a preceding communication, M. Francois Frank presented to the Society the general results of his researches on the action of the nervous filaments which accompany the vertebral artery, and go to, or leave, the first thoracic ganglion. He has only shown the action of the superior extremities of these vertebral nervous filaments on the dilatation of the iris, an action identical to that of the sympathetic nerve in front of the vertebral column, though less marked. It is on this special point, and on certain points concerning the innervation of the iris that he wishes now to draw attention.

Excitation of the superior extremities of the filaments which come off from the first thoracic ganglion, and penetrate the canal of the vertebral artery produces a mean dilatation of the pupil. This effect is manifested when the animal gives no sign of pain; for example, when the spinal canal has just been opened to expose the roots of the inferior cervical nerves, when recurrent sensibility is suspended in consequence of the operation. We are thus led to admit in the vertebral nerves some irido-dilator fibers borrowed from the upper part of the dorsal region of the spinal cord, like those which follow the sympathetic

nerve, situated in front of the cervical vertebræ,

In seeking to find the course which the irido-dilator fibers of the iris take, M. Frank was led to repeat the classical experiments on the prevertebral sympathetic, the superior cervical ganglion, and the filaments which arise from it. He has ascertained in the dog that in following into the cranium the different branches of the superior cervical ganglion, he could easily isolate a large branch, which penetrates the skull in front of, and along with the pneumogastric and glosso-pharyngeal nerves, separates itself from the one which gives off to each of these nerves an anastomotic filament, continues its course parallel to the internal carotid, though independent of it, meets the external motor oculi to which it gives a filament, and finally passes into the ganglion of gases at

the origin of the ophthalmic branch. This distribution is visible in a specimen which M. Frank exhibited to the

Society.

This branch, isolated from the superior cervical ganglion, terminating in the ganglion of gases, and separated from the bascular nerves of the internal carotid, can be reached in the living animal within the mastoid process. The operation is facilitated by the thermo cautery. When the posterior part of the digastric muscle is raised, the mastoid process is reached. Its outer wall is cautiously removed with a chisel, and its internal wall, which forms a very thin lamella of bone, being detached with a pair of dissecting forceps, the canal containing the prolongation of the superior cervical ganglion is exposed. The nervous branch is isolated by disengaging it from the neighboring vessels and dissecting it as far along as possible. When this is divided the pupil contracts, and the deep temperature on the corresponding side of the head does not raise a fact which admits the disassociation of the vascular filaments and irido-dilator filaments. afterward the sympathetic is divided in the neck, the superficial and deep vessels become dilated with blood, but the pupil is not changed; and the excitation of the superior extremity of the divided sympathetic produces contraction of the vessels without acting on the iris. The division of this cranial branch of the sympathetic has then interrupted the continuity of the irido-dilator fibers contained in the trunk of the sympathetic in the neck. That which finishes the demonstration is that the excitation of the perispheral end of this branch itself produces dilatation of the pupil without affecting the vessels.

From this first series of experiments this conclusion may be drawn: that the excitation of the cervical sympathetic acts directly on the iris, without the necessity of admitting an interme liate action on the vessels. Beside this, another fact becomes apparent: that the irido-dilator fibers furnished by the sympathetic have just united by the cranial branch at a point about the origin of the ophthalmic branch to those which the trigeminus receives from the medulla itself, as has been shown already by

experiments of Bernard, Schiff, and others.

M. Frank has followed the dilator filaments of the iris from this point of the ophthalmic branch. He will next submit to the Society the results of his experiments on

the direct ciliary nervous filaments and those which pass through the ophthalmic ganglion. He will also give the results of his researches on the ophthalmic ganglion as a reflex center.

M. Pouchet made a new communication on the formation of the blood globules. In ruminants their place of origin during a certain time in fætal life is the vascular area. In the rabbit the chorion is seen to be a vascular membrane covered by a simple layer of prismatic cells. According to Kolliker, the cells appear by a kind of epigenesis on the walls of the vessels already formed. After the twenty-second hour were found on the periphery of the vascular area in the middle fold traces formed by the agglomeration of cells. These forms, almost cylindrical and anastomosing with each other, were at the same time the beginning of the vascular walls and the origin of the corpuscles. In man the embryonic corpuscles have the same form as in the adult, but are a great deal larger. In their interior are found one or two spherical and finely granular nuclei. It is ordinarily at the fourth month of intra-uterine life that the embryonic corpuscles disappear to give place to the normal ones.

M. Paul Bert communicated to the Society a letter from a Danish physician who had several deaths following the use of compressed air in certain lung affections. He sent the results of a post-mortem examination of one of these patients, which constituted the same phenomena as those already shown on animals by himself, that is to say, of enormous air-bubbles in the liver, heart, and other prin-

cipal viscera.

M. Paul Bert presented some charts showing the hourly secretion of urea and urine. His experiments were pretty numerous, since they extended over a period of twenty-five days, and once occupying five consecutive days. He varied the nourishment, the hours of taking it, the sleep, and physical regimen generally. Here are the results obtained in the point of view of urea secreted. Keeping within his room, and partaking of a regular diet composed of from 250 to 280 grammes of meat, 200 grammes of bread, and 300 grammes of mashed potatoes, and undergoing moderate exercise and work for several days, M. Bert was enabled to observe that the mean quantity of urea contained in the urine passed in twenty-four hours was 20 grammes. By increasing the quantity

of meat the urea increased; but in order to determine the ureic co-efficient of food, the excess of meat taken was compared with the excess of urea secreted. The quantity of meat was doubled, 500 grammes being taken instead of 250. The urea increased 7 grammes, or about 3 grammes for every 100 grammes of meat, or four tenths of the nitrogen introduced into the system in the form of meat. This increase in the amount of urea rapidly followed the increase of azotized food. It could be observed after one day, and was maintained during the following days, so that the urea was in proportion to the meat ingested. He then suppressed all animal food, and the urea fell from 21-51 grammes to 13.55 grammes. The ureic co-efficient of meat can then be seen. Every 100 grammes of meat represent 3.15 grammes of urea in the urine.

If, after this experiment, animal food was returned to, the amount of urea secreted did not reach the previous figures. It attained to 16.67 grammes only after taking 280 grammes of meat, and the second day after to 22.40

grammes after the ingestion of 480 grammes.

As to hourly variations, it can be seen by the charts presented that the irregularity is extraordinary; however, by a close study it can be seen that these irregularities present certain rules and constant features. In the first place there is a minimum in the morning, a minimum, however, which is not in agreement with the repose of the night as might be believed. And then the urea increased from noon to two o'clock when no food was taken, the meal having been at 10 A. M. After 2 P. M. there was a fall, then a slight rise, and afterward another fall at dinner-time; then the curve rose and afterward fell to reach the lowest point in the morning. There was then a veritable rhythm in the secretion of urea, a rhythm which persisted a long time, though the habits, mealtimes, and quality of food were changed. The organism devours itself at these fixed hours when the regimen is changed. For what concerns the ratio between the quality of urine secreted and urea excreted, it was seen that in general when the urine increases the urea increases, but there were exceptions enough to permit the affirmation that there is no certain ratio. The same could be said of the coloration; thus, as a general rule, it might be said the higher the urine is in color, the more urea it

contains, and the more transparent it is, the less it contains, but there were some considerable oscillations which

could not weaken the general rules.

M. Paul Bert had been trying to find the origin of the sugar of milk. Did it come from the breast or the liver? He thought he had found a glycogenic substance in the mammary gland. Taking out the breast filled with milk, he sent it to M. Schutzenberger, who treated it with sulphuric acid. This gentleman found no glucose, but some parts of the same breast not treated with the acid, and left to themselves, gave, several days afterward, when they had undergone fermentation, evident traces of lactose.

M. de Sinety rehearsed the experiments which he had already communicated to the Society, going to show that neither the blood leaving the mammary glands, nor that entering them, contains anything of the nature of sugar, a fact which points to the breasts as the origin of sugar of milk.—Gazette Hebdomadaire,

SELECTIONS.

On Disturbances of Vision in Consequence of Loss of Blood.

BY D. C. HORSTMAN, BERLIN.

[Translated from Klinische Monatsblatter fur Augenheilkunde, April, 1878.]

R. F., 40 years of age, a worker in leather, consulted me in May, 1874, having in previous years been affected with attacks of hæmatemesis. This occurred again fourteen days since; three days afterward his vision became very much diminished; his complexion was pale; pressure over region of the stomach was painful; stools normal; other internal organs were healthy. Both eyes were normal in external appearance; dioptic media, clear, and pupil acts normally to stimulus of light. The optic nerve entrance of the right eye presents a normal contour inferiorly, but superiorly it is obscure, and this obscurity extends into the retina above two diameters of the papilla. The arteries of the fundus are unchanged, but the veins are somewhat enlarged but not tortuous. A similar con-

dition exists in the left eye, but to a greater degree. With the left eye aided by positive glass No. 23, he can read No. $3\frac{1}{2}$ of Snellen at 10 inches; with right and same glass No. $1\frac{1}{2}$ at 10 inches. At the expiration of six weeks the condition of the several parts remained unchanged, though vision somewhat improved. Three years later each papilla seemed whiter than usual, having in the in-

terim suffered no recurrence of hæmatemesis.

L. S. Meher, 44 years old, presented himself July, 1876. He was a man large and robust. Four years since had an attack of typhoid fever, having previously enjoyed perfect health; but since that time has suffered frequently from gastralgia. One year since had a severe attack of hæmatemesis, which recurred on the second and third day thereafter. After eight days upon awakening in the morning he observed that he was entirely blind, not able even to distinguish light from darkness, and no change has since taken place. Disease of no internal organ could be detected; both eyes normal in appearance, and the pupil evincing no reaction to the stimulus of light. fractive media clear; the color of the papilla was of a whitish color; the arteries large; the veins contracted in some degree; total amaurosis had taken place; the eyes examined after a long interval had undergone no change.

A man 28 years of age, had never suffered except from stomach disorders; for a year and a half has had frequent attacks of pain in the epigastrium, and occasionally severe attacks of vomiting of blackish red masses of blood. Seven days since in the course of six hours his vision became totally extinguished. This condition continued for fourteen days. Slight improvement in vision afterward took place; in four weeks he could discover large objects about him, and later with the left he could distinguish fingers at ten and a half feet distant; with the right the same at four and a half feet. The various parts of the eyes had undergone but slight deviations from the normal conditions. The patient was ordered nutritious diet and iron. Six months later not the least improvement in vision had taken place.

A woman, M. R., 37 years of age, had been blind four years; had given birth to five children. Four years since she had a miscarriage, and on several occasions suffered from a profuse loss of blood. Seven days thereafter, in the course of eight hours, she became totally blind, not

having even perception of light. Total amaurosis was the result. No affection of internal organs. Tension of both globes normal; the pupil widely dilated, exhibiting no reaction to access of light.

Another case of a woman of 33 years of age, previously healthy, who, seven days after a miscarriage and a considerable loss of blood, became totally blind, and

thus remained.

Disturbances of vision may occur suddenly after hæmatemesis and metrorrhagia; both eyes are then generally affected. They seldom take place immediately after the loss of blood; usually supervene between the third and the fitth or seventh day thereafter; may not until the fourteenth. The amaurosis consequent thereupon is gen-

erally incurable.

Of 41 cases recorded, 31 were from hæmatemesis, and 12 from metrorrhagia; in all of which cases impairment or loss of vision occurred fourteen daps after the efficient cause. Permanent amaurosis resulted in twenty one cases; in one eye, amblyopia, amaurosis in six; double amblyopia in nin; amaurosis in one eye, while the other remained intact, twice; a return to full power of vision observed in only four cases. Atrophy of the optic nerve

was the condition generally ascertained.

Among the subjects treated are congenital anophthalmos; primary syphilitic ulcer of the lid, congenital dislocation of the crystalline lens in six persons belonging to one and the same family: 1. Woman. 59 years, lens was dislocated upward and inward; 2. Man of 37 years, lens of right epe dislocated inward, the left inward and somewhat downward; 3. Man of 35 years, lens of right upward and inward, that of the left inward; 4. A girl of 10 years, lenses of both eyes inward; 5. A boy of 5 years, lens of right upward, that of the left upward and inward; 6. A boy of 7 years, lens of right upward and outward, that of left upward and inward, that of left upward and inward.—St. Louis Med. Jour.

Recovery of a Case of Hydrophobia.

An exchange publishes an interesting account of a recovery from hydrophobia by Dr. Nicholls. The details which he supplies are of the greatest interest and importance. The bite was received seven weeks before the

earliest symptom. A period of three days' restlessness and occasional difficulty in swallowing ended in the sudden onset of a condition of maniacal convulsion, the spasm being most severe and tetaniform in character, and recurring at first almost constantly, except when the patient was under the influence of chloroform, and afterward in paroxysms for a week or ten days, when they ceased, although sli ht psychical disturbance continued for a longer time. During the most intense stage of the disease an attempt to drink always produced spasm, and it was excited also by the sight of any white object. The man had no fever, but retention of urine and most obstinate constipation. The tetanic character of the spasms was remarkable; it was marked in the earliest as well as in the later convulsions, and the opisthotonos was extreme, so that during the paroxysms the man rested on his head and his heels. Trismus was also present, and increased the resemblance to tetanus, and the case was at first regarded as of that nature. The treatment adopted was the inhalation of chloroform, and the hypodermic injection of calabar bean and morphia at first, and afterward of morphia only, three grains of calabar bean and forty grains of morphia being injected, Dr. Nicholls informs us, in twenty-one or twenty-two injections.

Dr. Nicholls tells the history of the case without note or comment, and in this he is wise, for the simple facts constitute one of the most valuable contributions which the literature of hydrophobia has received. Doubtless the case will be received with hesitation by some, because the patient recovered; by others because the symptoms were not absolutely typical. But as an instance of recovery it does not stand alone, even among well authenticated cases, and the deviation of its symptoms from the most common type is by no means an unusual character in cases of hydrophobia. We pointed out a few weeks ago how frequently mistakes in diagnosis are made, on account of the extreme preponderance of some one of the symptoms, or groups of symptoms, which characterize the disease. In one the symptoms are mainly psychical, and the case is regarded as one of mania, symptoms of respiratory spasm and of convulsion being subordinate; in another the latter are chiefly marked, and the case is tetanoid in its aspect, as in that on which we then commented, and as in the case which Dr. Nicholls records today. The preceding bite from a dog probably rabid, the incubation period, the absence of any mental anxiety, the early pharyngeal symptoms, all point to the case as being one of true hydrophobia so strongly that the intensely tetanoid character of the spasm can not be held as militating against the conclusion. Regarding the remedies employed, there is little to be said; they were not new, and had been used before in many cases without success, but the recovery of the patient is no doubt to be ascribed largely to the perseverance and energy with which they were employed.—Lancet.

Acne and Acne Rosacea.

CLINICAL LECTURE DELIVERED AT THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

BY H. G. PIFFARD, M. D.

Gentlemen:—The first patient whom I present to-day is one who has an eruption upon the face. It is an eruption with which you are all more or less familiar, because it is not by any means infrequent or uncommon. The question is, from what form of skin disease is this man suffering? He has had it continuously for about two years, but about every alternate week these little points which you see get larger. In the first place, there is a general redness of the surface. In addition, you will notice a large number of elevations; some of these are red and solid, others are mounted by little yellowish points; and here is one which is rather soft, but at the same time you do not see any yellowish point at its summit. When this soft elevation is punctured, it is, as you see, filled with pus.

On the face of this second patient there is an eruption which is very similar in appearance to the one just described, yet the eruptions in these two cases differ from each other considerably. The eruption upon this woman's face is of two years' standing. Her general health is very good. The first is a case of pure acne; the second is a case

of acne rosacea.

ACNE ROSACEA.

Acne rosacea is a skin affection which is always located upon the face; it is never found elsewhere, and it usually commences in the following manner: at the very beginning it will be found that there are present little reddish rosy spots; sometimes these little spots are accompanied by slight circumscribed infiltration of the surrounding skin. These spots are almost invariably situated upon the summit and sides of the nose, and extend from the nose to the cheeks. The small reddish spots, guttæ as they are sometimes called, last for a few days, perhaps for a week, and then disappear, to return in the course of a few weeks. As time goes on, for the disease is exceedingly chronic, the number of these spots increases, and they remain upon the skin longer than at first, but as they disappear they are apt to leave a slight thickening of the skin.

After a time, the new spots which appear are seen before the older ones have disappeared; so that at the end of one year, perhaps, you will find a pretty uniformly diffused redness, with a slight amount of thickening of the skin. This redness disappears in a measure under pressure, but returns as soon as the pressure is removed. The color, however, does not disappear as rapidly as in acute

congestion.

In addition to the redness of the surface, we now find that the veins upon the sides of the nose are increased in size. When the disease has lasted for some time, the veins become prominent, especially about the alæ of the nose. When it has had a duration of perhaps three or four years—in some cases it occurs much sooner—the thickness of the skin covering the nose, the enlargement of the veins, and the redness are very much greater than in health, and the same changes, to a less extent, are manifest upon the cheeks.

The skin of the nose may perhaps be increased in thickness three, four, or five times, thus giving the organ a very uncomely appearance. Formerly this condition was regarded as the opprobrium of skin diseases, because is was one of the most difficult to relieve. But as we have gained a better knowledge of its causes we are, in many instances, able to remedy the cause upon which it depends, and then by appropriate local treatment to diminish very decidedly

the amount of the lesion.

CAUSES OF ACNE ROSACEA.

First, with regard to causes. The disease rarely occurs in young persons; it occurs most frequently between the ages of thirty-five and forty-five years. In men, it depends

most frequently upon some derangement of the digestive function. This derangement of the digestive function may be the result of functional or organic disease of the stomach and liver. You are all aware that habitual indulgence in the use of alcohol produces this resaceous condition of the skin of the nose. That is not due so much to direct congestion of the face produced by the liquor, as to dyspepsia and congestion of the liver, which, by reflex action, disturbs the circulation of the face, and thus tends to produce congestion. Any cause whatever which is capable of congesting the face acts as a predisposing cause of acne rosacea. The face may be kept almost constantly congested by following certain occupations. It has become proverbial that cooks are more subject to resacea than any other class of persons. Next to them come blacksmiths and forgers of metal. You all know that a full meal will produce more or less temporary congestion of the face. As digestion goes on and the stomach becomes empty, this congestion passes away. Now, if these causes of congestion are in constant operation-if, for example, a man lives too high and habitually drinks too much alcohol, and thus keeps his face in a constant state of congestion-the resucceous condition is apt to develop.

In women, however, there is another class of causes which, in a majority of cases, operates in the production of rosacea. In them, the rosaceous condition is not so often due to derangement of the digestive function as to derangement of the uterine function. Certainly more than one-half the cases of rosacea occurring in the female have their origin either in functional or organic diseases of the ovaries or uterus. You have already learned of the intimate relation which exists between the generative organs

and the circulation of the face.

When these organs are diseased, we find that the skin of the face very often makes it manifest by congestion during the time the uterine disease exists. If the uterine disorder is chronic, there is a tendency to continued congestion, and ultimately a rosaceal condition is developed.

As causes of acne rosacea, therefore, we may look to occupation, derangement of the stomach or liver, and derangement of some portion of the generative apparatus, more especially of the uterus and ovaries.

TREATMENT.

You can readily perceive, as we come to speak of the treatment of these skin affections, that, if the causes of a constant, or almost constant, congestion of the face can be removed. we have an opportunity to treat the case successfully. But if we can not remove these causes, if they are in constant operation, all that we can do in the way of treatment is simply palliative. At the very outset, therefore, we should inquire regarding the general health of the patient, especially with regard to derangements of digestion, disorders of the liver, irregularities of the bowels, etc. In the female special inquiry should be made with reference to the uterine functions. We should never forget to make close inquiry with reference to the habitual use of alcoholic stimulants, and determine as nearly as possible the quantity consumed daily. In the case before us there is quite recently an accession of the rosaceal condition. He says he has been in the habit of using alcoholic stimulants in considerable quantities, but has given them up; he has not taken very much during the past two weeks. He has been in the habit of taking sometimes as many as treenty drinks a day, but not sufficient to get really drunk. His former drinking has probably affected his liver, and in consequence congestion of the face has been induced, and the two or three drinks which he now takes daily are sufficient to maintain this congestion. The damage done by a single potion is not overcome before another is taken, and in that manner there is kept up a constant tendency to congestion.

In our other case the patient doubtless has some uterine disorder, and this is to be suspected from the location of

the eruption about the mouth.

The man has, in addition to the slight rosaceal condition, papules and pustules of acne. The two diseases, as I have already stated, are distinct, but in the rosacea we

very frequently find acne in addition.

Both the acne and the rosacea are dependent upon the same class of causes. The first thing this man must do, if he wishes to get rid of the eruption upon his face, is to stop using alcoholic drink. We should next examine with reference to hepatic congestion, and endeavor to correct all disorders of the stomach, liver and bowels. When that is done, we should consider what is best to be done in the way of local treatment.

LOCAL TREATMENT OF ACNE.

We have here pustules, papules, and a certain amount of redness. Our first effort should be to remove the congestion as quickly as possible. The pustules should all be punctured; and in opening them we should cut pretty wide and reasonably deep. The papules should be treated in the same manner, and in putting your knife through them make the incision sufficiently deep, so that they will bleed quite freely. In other words, make local depletion.

Next in order, the best application to reduce the congestion would be a poultice. If more convenient, the face can be held in hot water. To do this, let him take a basin of hot water, immerse his face, withdraw it. breathe, immerse it again, and so go on bathing the parts for some time every evening. Another method is to cover the face with pieces of muslin kept constantly wet with water as hot as it can be borne. As means for relieving local congestion, therefore, use local depletion and a poultice, which

induces resolution by stimulating the circulation.

In the course of a week, if this plan of treatment is followed out faithfully, a very decided bleaching of the parts will be produced. If there is very much congestion of the skin not invaded by the pustules and papules, little scarifications may be made wherever it is most marked. Although the color at the end of a week, perhaps, may be very much improved, still there will remain a certain amount of thickening of the skin. That infiltration must be reduced, as you have often been told, by the use of alkaline applications. The face should be thoroughly rubbed three or four times a week with green soap. The soap will cause an active inflammation that will soon subside, and leave the skin yet red, but with the thickening much reduced. The skin then usually has a polished, shining appearance.

When the infiltration and thickening have been removed, and nothing remains but the red color and polished appearance of the skin, this is most readily removed by the application of sulphur. For this purpose a wash, prepared according to the following formula, may be empared.

ployed:

R Lac. sulphur, Glycerine, Rose-water, Bay rum, āā. This should be applied every night.

In this manner, if the exciting causes have been removed, a pretty good cure can be effected in the course

of two or three months.

When a varicose condition of the veins is present, the veins must be destroyed. This can be done either by dividing them crosswise, or, still better, by dividing them lengthwise, throughout their entire extent, with a thin, sharp knife, and then, if you choose, rubbing into them a small amount of the persulphate of iron. The veins can also be obliterated by touching them with a white-hot needle. The point in this item of the treatment is, by

some means, to obliterate the veins.

For the thickened condition of the skin, present later in the disease, you will be obliged to institute an entirely different course of treatment. In the third, or last stage of the disease, the redness which characterized the earlier stages may have in great measure faded, and the principal lesion will be a marked hypertrophy of the skin. Internal medication will have little influence upon this condition. It may be diminished, although I have never seen it entirely removed, by the use of the constant galvanic current applied directly through the nose. In other cases red-hot needles will destroy more or less of the thickening, and the punctures on healing will induce a certain amount of contraction in the neighboring skin. When the thickening is excessive, excision of portions of the integument may become necessary.—Med. Record.

Medical Society of the County of New York. Stated Meeting, June 24, 1878.

POTT'S DISEASE—ITS PATHOLOGY AND TREATMENT.

Dr. Newton M. Shaffer read a paper upon the above subject. He began with the statement that opportunities for post-mortem examination in the early stages of Pott's disease were rare, and that he had never seen a case of acute Pott's disease. No one had attempted to trace the symptoms of spondylitis in its acute stages. It was so typically chronic that it was always difficult to decide in each case exactly at what time the disease began. He divided Pott's disease into four stages:

1. The prodromatous stage, which was indistinct, liable

to escape attention, and was characterized by slight indisposition upon the part of the patient, that might continue for only a few days or for months, and sometimes was wanting.

2. The stage of pain, which was often described as the first stage. It was usually preceded and accompanied by reflex spasm of the spinal muscles due to irritation of the peripheral nerves.

3. The stage of deformity, due to want of substance in

the vertebræ and intervertebral bodies.

4. The stage of abscess,

Paralysis of the lower extremities had been classed among the symptoms of the third stage.

Dr. Shaffer divided the cases of Pott's disease into two

classes: 1. Suppurative; and, 2. Non suppurative.

The non-suppurative variety occurred most frequently in the dorsal region.

The suppurative form of the disease occurred most commonly among children.

PATHOLOGY OF LATERAL CURVATURE OF THE SPINE.

Referring to lateral curvature accompanying Pott's disease, Dr. Shaffer expressed the opinion that in all cases of lateral curvature of the spine there existed at some point in the spinal column disease of the bones. He did not regard simple loss of balance of muscular power as a satisfactory explanation of the condition found in lateral curvature.

Again, idiopathic scoliosis was not likely to be developed simply because of unequal length of the lower extremities.

Primarily, muscular contraction might be the cause of lateral curvature, but the question remained, what was the change which produced the muscular contraction?

PATHOLOGY OF POTT'S DISEASE.

The parts involved in angular curvature of the spine were bone, cartilage, synovial membrane, and ligament. The fibrous capsule was excluded because it was rarely the seat of primary inflammation. In the absence of any facts with reference to the seat of the primary lesion in Pott's disease, he considered it from the standpoint of clinical experience. Preparatory to a complete understanding of the significance of symptoms, Dr. Shaffer re-

viewed the anatomy of the bones, the intervertebral cartilages, the synovial membrane and the ligaments, and the conclusion was reached that the most important symptoms of Pott's disease were those which came through the medium of the nervous system. He believed he was the first to call attention to the fact that chronic joint disease might exist in any given articulation tissue, which was sparsely supplied with nerves, without producing any subjective symptoms. The neural symptoms in Pott's disease, therefore, were the most important as indicating the seat of the primary lesion, because they depended directly upon disease of the bone. The synovial membrane might be diseased for a long time before any symptoms would be developed, and the cartilages became diseased in consequence of disease of the bone. Until the bone was involved reflex muscular spasm did not occur, and reflex muscular spasm always indicated osteitis. The bone was a structure abundantly supplied with nerves, and when affected gave rise to neural symptoms; hence their importance. Reflex muscular spasm was not conservative as we had been told, but depended upon pathological change affecting the bony structure of the spinal column.

In fact, there was but little difference between idiopathic spondylitis and idiopathic disease affecting any of

the large joints.

TREATMENT OF POTT'S DISEASE.

With reference to treatment, Dr. Shaffer believed it to be impossible to apply continuous extension and counterextension, which could be maintained with any degree of success. He also believed there was no assurance that the extension reached the bones; regarded the change which took place in the projection as due to the effect produced upon the projection itself; thought it was more apparent than real, and was due to the distensibility of the normal tissues and the obliteration of the compensatory curve; and that there was no actual lengthening of the vertebral column, except what was permitted by the elastic ligaments. Further, he thought that lengthening out the spinal column was of no avail, because the space would not be filled with osseous material, that the column would sink back again, and that relief of symptoms and curing the case were two different things. Suspension and retention by means of the gypsum splint was no more

likely to cure caries of the spine when applied to the trunk than when applied to any other portion of the body. Again, his experience had taught him that too much should not be expected from rapid improvement. The treatment by suspension and the plaster dressing did not prevent motion at the point where the disease existed, and, although it might place the patient in a condition favorable to recovery, the result not infrequently was just to the contrary. If Pott's disease was of traumatic origin, no doubt but that speedy cure would follow almost any

plan of treatment.

He had had considerable experience in the use of the plaster jacket, and other methods of support, and he did not believe that any apparatus was capable of affording such uniformly good results as had been claimed for the gypsum dressing. As a support it failed when the disease was above the seventh dorsal vertebræ, and the bar running over the head from which support was to be made when the disease was higher up in the spine, was inoperative as a means of extension, and ungainly to the sight when compared with the apparatus devised and employed by Dr. C. Fayette Taylor. For disease of the vertebræ above the seventh dorsal he had discarded the plaster jacket, and in the treatment of disease below that point sufficient support could be given by almost any apparatus. Indeed, as had been stated, the vertebræ in that region were much less liable to become diseased than those higher up. The objections to treatment by means of the plaster-of-paris jacket were, the great weight of the dressing, the difficulties and dangers attending its application, the liability to produce chafing and excoriations, which might be developed at any point, and go unrecognized until they became serious complications; the necessity of making suspension at each time the apparatus was removed; the great filth; and the nidus which it afforded for vermin. Dr. Shaffer regretted that he found so little to commend it to the use of the general profession. The country practitioner and the village blacksmith could apply the antero-posterior support as well as the plaster, and the advantages claimed for it were ease of adjustment, ease with which it could be removed, modified to suit the case and readjusted, the concentration of support for the diseased portions of the spine through the medium of the transverse processes without interfering with the muscles of respiration, and finally cleanliness. For those who could afford the steel apparatus there was no necessity for the plaster application. The form of apparatus which Dr. Shaffer thought best adapted to the treatment of Pott's disease was a combination of Taylor's brace and the gypsum dressing. [The proposed combination was not described.]

Dr. Shaffer then presented a number of patients who had been treated and cured by means of the antero-pos-

terior support.

One patient was presented who had been under treatment for hip-joint disease ten weeks before he came under Dr. Shaffer's observation. There was no deformity of the spine present when Pott's disease was diagnosticated, and the antero posterior support applied. The patient, a child, had worn the instrument thirteen months. There was then (at the time the patient was presented) a visible projection of the spinous processes, showing that the diagnosis was correct.

The paper was accepted by the Society, and being open

for discussion,

· Dr. Lewis A. Sayre remarked that, so far as the pathology of the disease was concerned, he had no criticisms to offer, but with reference to treatment he differed very essentially with the author of the paper. He had in his possession between seventy-five and one hundred braces which had been worn by patients in all stages of the disease, and he was not aware at the time of their removal when the disease commenced or when the patients began to wear the instruments, but at the time they were removed the disease was progressing. Those were cases which had formerly been under the care of other surgeons. In all the cases in which he had first used the brace himself, the deformity had steadily increased. The patients had recovered, it was true, and so also would they recover when kept in a horizontal posture, and many of them recovered without any treatment whatever, but recovery took place with deformity.

In the last patient presented by Dr. Shaffer there was no deformity when the instrument recommended by the doctor was applied; but it had been worn thirteen months, and at the end of that time there was a conspicuous deformity. Dr. Sayre's own experience had been the same, namely, that recovery took place while the children were

wearing the brace, but that the deformity steadily increased while under treatment. When Dr. Taylor's brace was first devised, it was the best instrument we had up to that time, but the addition of the neck yokes prevented the child from becoming straight, set aside one of the fundamental principles underlying the successful treatment of Pott's disease, namely, gentle extension, and was one explanation of the occurrence of some of the hideous deformities which he had seen developed while the instrument was being worn.

Again, the brace was objectionable because it made upon each side of the spine such pressure as interfered with a proper blood supply, and thus favored a long con-

tinuance of the disease.

Dr. Sayre believed that Pott's disease could be cured without deformity if gentle suspension and the plaster jacket were employed before deformity existed; that if deformity was present, it could be kept from increasing,

and in many cases diminished by the same means.

The idea that whatever repair had taken place was broken up every time the jacket was applied or suspension made, was a false impression, and the idea advanced by Dr. Shaffer, in that respect, was not correct. If, as Dr. Shaffer claimed, chafing and excoriation were a common occurrence, it was due to either an imprudent or an improper application of the plaster dressing, and if such accidents had habitually occurred in his experience in its use, it was evidence that he (Dr. Shaffer) did not properly apply it.—Medical Record.

Yellow Fever, its Features and Phenomena.

BY T. S. BELL, M. D.

THERE is not in the entire science of medicine a more instructive study than that of intermittent fever in its multitudinous phases. It may come in a deadly form in its first paroxysm, or it may attack for many months, always impairing health, but not endangering life. But no matter in what form it may come, it has, even in its irregular forms, certain features that distinguish it from all other diseases. There may be a moderately cold stage, followed by speedy reaction, forming the hot stage, and

this usually ends very soon with a sweating stage, and this closes the first paroxysm. Sometimes the cold, hot and sweating stages are confined to a single limb, the arm for example. Sometimes the patient lies for hours in an apoplectiform condition, from which he emerges in a very feeble sweating stage. Another will feel very comfortable while lying still, but the moment the head is raised up a fainting fit comes on that passes off as soon as the victim lies down. Sometimes the patient has violent delirium, and the attack resembles brain-fever. I have seen a number of cases that were perfectly cataleptic during the paroxysm. Intermittent fever wears the mask of every species of disease, but there is one sign always present there is albumen in the urine in the cold stage, which disappears from it in the hot stage. In remittent fever this sign is more persistent, but in moderate attacks it may not be fatal; but in severe forms of the disease this is a sign of evil augury. In that celebrated remittent fever on the Island of Edam, near Batavia, reported by Dr. Shields, the kidneys and liver were speedily overwhelmed; and Dr. Shields, knowing nothing of the phenomena of renal disturbance, was under the impression that his cases were fatal because of cerebral attacks. He did not go behind the brain-symptoms to ascertain to what they were due. I do not know of many endemial onslaughts of yellow fever that were more fatal than this remittent fever at Edam. Dr. Shields is very expressive of the fact that those who slept on the shore took the disease and died.

In New Orleans, in 1849, Dr. E. D. Fenner says he saw "in the months of September, October and November, cases of intermittent, mild remittent, and dysentery, run into well-marked yellow fever." Dr. Brickell informed Dr. Fenner that "he had a case in his ward which entered as an intermittent and was relieved; but before leaving the hospital a relapse occurred, which proved to be decided yellow fever. This was also relieved, but before convalescence was established the patient fell into distinct intermittent fever again." An experienced medical friend informed Dr. Fenner "of a case of intermittent fever, in private practice, which most unexpectedly terminated

fatally with black vomit."*

I call attention to these reports because they are very

^{*} E. D. Fenner's Southern Medical Reports, Vol. I. p. 117.

instructive. Are we to believe the intermittent fever, while recovering, fell into yellow fever, and, in convalescing from that, became intermittent fever again? Or, in the relapse, did it merely assume some of the appearances of yellow fever, and wear them as a mask, as it masguerades in the habiliments of a large variety of diseases? And in the case of intermittent fever, which ended fatally with black vomit, what are we to think? The worst forms of intermittent fever are not apt to terminate in that way in our climate. In this class of diseases there is no mean that has been invented that can explain these phenomena but the microscope. The instrument was not used, the renal condition was unknown. and conjecture was resorted to in the abs nce of knowledge that could have been positively gained by the proper use of the microscope. I am persuaded that many hundreds of cases of remittent fever are treated as vellowfever cases. Hence we find many medical men affirming great success in the treatment of yellow fever by liberal doses of quinine. When the solar temperature, in a locality capable of engendering yellow fever, has reached the sum of the squares of heat that produces this great disease of the tropics, quinine is incapable of arresting the diseased actions that are characteristic of that great malady. There are perversions of secretions, diseased eliminations, with a rightfully rapid march, that can not be controlled by quinine. Hence the discordant statements of medical men about the value of the salts of Peruvian bark in vellow fever. One set uses these articles in remittent fever, and is, of course, very successful; the other set uses them in yellow fever, and finds constant failure.

I have endeavored to impress upon my readers the important, the momentous truth, that Colling, of Martinique, and Blair, of Surinam and Demarara, have thrown more light upon the phenomena of yellow fever than all the preceding centuries had shed upon it. Until they made their researches and published them, yellow fever was an inexplicable problem. And what is it that stands revealed to us through the researches of Colling and Blair? They show that the renal organs bear the brunt, and that no case of yellow fever can occur without making very great changes in those organs. Another momentous truth, that should be impressed upon the mind of every physician who has the management of cases of this kind, is the velocity

of these changes. There is not a moment to lose. If we examine the urine of the patient on the first day of the disease, and in the hot stage, we find albumen; we know that this is not a case of intermittent nor of remittent fever, because that significant sign appears in the cold stage of those two diseases. We then, having found albumen in the hot stage, resort to the microscope, and find a large deposit of the epithelium of the bladder, and the next morning there are tube-casts; and these conditions speak a language of the highest importance. A medical friend, who is an expert with the microscope, suggests to me that Bright's disease of the kidneys might produce some disturbance in the diagnosis. I think not. The tube-casts in desquamative nephritis, or Bright's acute desquamative nephritis, are not preceded by the destruction of the epithelium of the bladder; and in Bright's disease, coincident with the appearance of the tube-casts, we necessarily have some dropsical effusion about the eyelids, or face, which is not among the phenomena of their

appearance in yellow fever.

These very significant signs settle the case. They are the avant couriers of a rush of perversions that will speedily sap the foundations of life if not arrested. These perversions are made in these fevers, and are marked as to their time by no other poison than that productive of intermittent, remittent, and yellow fever, and cholera. In some cases of intermittent fever there is no reaction. The patient never emerges from the cold stage, and he infallibly dies in the first or third paroxysm. He may walk about, and be in full possession of his intellectual faculties, but he is pulseless; he has a collapse temperature, and he does not secrete a drop of urine. In bad cases of remittent fever a similar state of things may spring up among the perversions caused by this poison. The extraordinary perversions are a part of the early phenomena of every case of yellow fever. They are not a portion of the early phenomena of all cases of intermittent or remittent fever. The great perversion is present in every case of cholera that ever appeared, and not a single case of that disease, from the first recorded by Hippocrates to the present time, has ever been cured; nor has any case of the malignant intermittent fever ever yielded to any kind of treatment. These malignant forms of intermittent fever have occurred here in some persons who were conspicuous in this community, and they all went to "the unseen world" without any kind of hindrance from medical art.

In yellow fever, unless very grave signs in the renal organs are shown very early in the attack, we may do much to save the patient. Standing in the presence of these grave perversions, provided we know them, we may do much to control and guide them toward safety. It is a matter of great moment that we shall see the case before the triple-phosphates are perverted from the kidneys to the alimentary canal. It is of the highest importance, in every case of yellow fever, that we shall use due diligence with great discretion in guiding the renal organs, because the chief stress of the disease is discoverable there. Every great evil in a case of vellow fever has its nidus in the liver and renal organs, and the discovery of this nidus is readily made by the use of the microscope. The man who attempts to manage vellow fever without that instrument necessarily gropes his way in the dark, and his patient will be apt to go to the dark house. As soon as the microscope reveals the fact that it is a case of yellow fever, cloths, folded in many layers, should be dipped in boiling water, wrung out thoroughly by two persons, using a dry towel, then held to the fire and applied over the renal organs, with oil-silk over them; they should be well fastened on the patient and changed every two hours. Efforts should be made to excite copious action from the skin, and the patient should drink freely of cold water, because that is the best and the safest of all diuretics. The officinal sweet spirits of niter should be used. If the kindeys can be prevented from undergoing perversions, the case will be saved; without that an impending peril hangs over the patient's life. If the patient is found in the locality where the poison was engendered, he must be moved outward or upward beyond the reach of the poison. Hackett, an intelligent yellow fever physician, speaks very highly of croton-oil. This, discreetly used, has its value. But let it never be forgotten that the mi croscope must reveal the condition of the urine at each visit. Without that a prognosis of the case is scarcely worth the amount of breath used in making it.

I ask the attenttion of the reader now to certain facts. They are not theories, but absolute verities. These are points that can be proved or disproved, and therefore

have that estimable advantage over mere opinions.

The cause of intermittent, remittent, and yellow fever, acts exclusively at night. From the days of Lancisi, to the present time, this has been a familiar fact in intermittent and remittent fever. At Rome the gates, doors and windows, next to the Campagne di Roma, are closed at sunset, because it is known that the death-dealing poison of the Pontine marshes begins its action then. Regnault de Lisle, a great master of the subject, is very impressive in his facts on this point. I have already referred to the notorious history of the Maremme di Lucca, embracing centuries of time. The inhabitants of that fair and fertile region were compelled to fly from their homes every year, during the hot season; but they secured the watching of their crops by building high towers along their possessions, in which the watchmen slept at night, alternating periods of watching and sleeping. I have also shown the successful method adopted by the Grand Duke of Tuscany for relieving the Maremme from this dreadful evil. He did for it the same thing that has been done for Louisville—he destroyed the marshes, and, in that way, secured the health of the inhabitants. I have shown that this fact, night exposure, is the source of danger in yellow fever, appealing to the observations of numbers of experienced physicians, in various parts of the world, in proof of this material point.

Another similarity is found in the fact that the same means that prevent the formation of the cause of intermittent and remittent fevers equally prevent that productive of yellow fever. The latter is a disease that is very limited in its operations, as compared with the cause of intermittent and remittent fevers. This very limitation, by which nature speaks emphatically, saying thus far and no farther shalt thou go, is utterly destructive of that moon-struck theory recently advocated by Dr. Henry Smith of the United States Marine Hospital Service. Dr. Smith assumes, without the shadow of proof, that yellow fever is caused by "live germs," which travel like the "army-worm." If anything more absurd than this has ever been invented, I have not had the pleasure of meeting it. Vera Cruz is one of the favorite homes of vellow fever. Why have not these "germs" traveled to Zalapa? It is but seventy-five miles from Vera Cruz; it is in con-

stant communication with Vera Cruz, yet this yellow fever "army-worm" has never been able, in over three centuries. to make this short journey. When six thousand of the people of Leghorn, and a French army corps, with nearly two hundred of those taken sick at Leghorn, marched to Pisa while the yellow fever ravaged Leghorn, why did not Dr. Smith's "army-worm" travel to Pisa? No case of the disease occurred among the people of Pisa. Why did not the sixty thousand refugees from Lisbon, who fled to Cintra, chiefly, carry the "fomites," or "army-worm," of Dr. Smith, with them! They did not in a single instance. There was "a local cause" for the disease at Leghorn and at Lisbon, and nothing of the kind at Pisa, nor at Cintra. The Lisbonese could as easily have carried portions of their great earthquake power, in 1755, to Cintra, as they could have carried one of Dr. Smith's "army-worms" to Cintra. They could have found specimens of the earthquake much more easily than they could find a specimen of Dr. Smith's germ. I think it should be called the United States Marine Hospital Service "army-worm," because it is very much more on service in that great national institution than anywhere else upon earth. other similitude of the "army-worm" to Dr. Henry Smith's "fomites" that travel, is in the fact that both prey upon green, very green things. Why is it that these "armyworms" of Dr. Smith are never able to visit any one of the old localities of the disease in the city of New York? The places that once knew it regularly in the city of New York never have a case in them now. It is not because of the quarantines, because they were as stringent at New York, when the yellow fever assailed it, as now. What hinders this invention of the United States Marine Hospital Service, the yellow-fever army-worm, from entering New York City as it formerly did? I was in the city of New York when refugees from Norfolk, Portsmouth and Goshen arrived there, by the various railroad routes, in sufficient numbers to have brought "bales" of Dr. Henry Smith's "yellow-fever army-worm," but the "worm seemed to die before the refugees reached New York. Not one "army-worm," not a particle of "living germs," nor "fo-mites," of any description, reached that city. The mass of "living germs," or Dr. Smith's "army worms," did not go to the farm of the Hon. Henry A. Wise when he took yellow-fever patients from Norfolk to his farm. Neither himself, nor any one on his farm, was bitten by Dr. Smith's "yellow-fever army-worm." Not a "bale" of this kind has ever reached this city in an experience of one hundred years. Nor is it now found in any part of the county where Memphis stands, except in the town. It is painful to see such evidences of a want of philosophy, of an entire absence of observation, as the United States Marine Hospital service exhibits to a waiting and expectant pub-We believe that the people of the South would not exchange the cotton-worm for Dr. Smith's "army-worm." It is an evidence of a disposition to catch at any paltry absurdity when men undertake to meet such a gigantic enemy as yellow fever by the wild vagaries of a distempered, untaught, uncontrolled imagination. Every place on the face of the earth, whose local condition has been improved so as to shut out intermittent and remittent fevers, has been equally as effectual in preventing yellow fever. It is a disease that springs from a local surface; effectively change that, and that place is done with yellow fever, intermittent and remittent fevers. The great mass of this city, once given over to annual intermittent and remittent fevers, never produces a case now; and every place, subject to yellow fever, on the face of the earth, can be equally changed, so as never again to produce a case of yellow fever.

Intermittent and remittent fevers are subjects of a peculiar and expressive law. The poison that produces them has a property called latency, by which it may lie in the system a long time, some multiple of seven, and it may then produce those diseases in a climate where such diseases are never made. It is quite common for this latency to exist, in many cases, all winter, in this climate, and then make attacks in the spring, before the cause is made. This is evident from the fact that the manifestation occurs in old residents in the locality, while recent arrivals in the spring do not show any sign of the disease. Wells, the great discoverer of the laws of dew, was a student of Dr. Gardener's, at Charleston, South Carolina, and noticed these facts repeatedly. The poison may show itself, be broken of a portion of its power by antiperiodics, and in one, two, three, or four weeks, or some later multiple of seven, there will be a return of the attacks, although the victim may be among a people who never have anything of the kind. This is a universally-recognized feature of intermittent and remittent fevers. It is quite common among the survivors of a yellow-fever district; but unfortunately the mass of the exposed die. But some escape, go to the mountains of Tennessee, or Virginia; there develop the disease in three or four weeks, and have precisely that form of it that occurred in the locality where

the poison was acquired.

The records of yellow fever are filled with cases of this kind. Yellow fever usually ceased as an endemic in Philadelphia in November. Drs. Rush, Deveeze, Reece, and others, report cases of it through December, January, and sometimes as late as in February. Similar observations were made in New York. The cause in these cases was latent, and remained so for months after the endemic ceased to prevail. The case of the regiment that was sent to Pondicherry, on the eve of yellow fever, is to the point. When the Governor-General found that he had by his folly slaughtered about one-half the regiment, he ordered the remainder to Naim, at the foot of the Himalaya Mountains. It is a great sanitarium, entirely free from all "army-worms," fomites, germs that give yellow fever, and everything of the kind. Dr. James Johnson states that the garrison at Naim cleaned up the barracks, and received the invalid remainder of the regiment. The two sets of soldiers messed together, drilled together, and enjoyed each other's society intimately. What was the result? Cases of yellow fever, of a fatal character, continued to occur throughout the period of four months, after the arrival of the regiment at Naim; and there was not a case among the soldiers who occupied the barracks at the time of the arrival of the invalid regiment. These cases display the law of latency in yellow fever. It is in that precisely what it is in intermittent fever. It is impossible that these identical features can be the work of various poisons.

But I ask attention now to a celebrated case that shook the public mind of England in 1809-10. A military expedition, under Lord Chatham, brother of the Prime Minister, William Pitt, was sent to Walcheren, to capture Flushing. In the course of a very short time the army was virtually destroyed by an unseen enemy that acted in the night. The men in the vessels, anchored away from the shore, were perfectly exempt from disease. When the disaster was ruinous, and the expedition a total failure,

the remnant were ordered back to England. It was noticed that all the officers, who had lodgings in the upper stories, entirely escaped an attack of this wasting pestilence. Hundreds of the soldiers felt so well, upon landing in England, that they felt that their sufferings and perils were over. Those who thought this showed that they knew but little of the enemy that had assailed them. This disease continued to fatally assail these men, in many of the healtiest districts of England, just as it attacked the men on the island. The medical journals of 1810-11 were filled with accounts of the cases, and the disease obtained the name of the Walcheren fever. Its peculiarity was, that the liver and spleen looked as though they were converted into bags of soot. Great numbers of these returned soldiers were not attacked till twelve months after they returned home. The poison was latent until just before the attack, and then performed its dreadful ravages in a few hours, precisely as it did at Walcheren.

A poison possessing such potency as this—that conceals itself until its time for action comes, and then leaps into destructive power—deserves the careful study of medical men. Its laws are well known, and should be at the fingers' ends of all medical men. We can utterly destroy the sources of this poison. It has been utterly destroyed in thousands of places, and the same success can be achieved in thousands of other places. We should go on until not a vestige of this poison can be found within the fair domains of a redeemed, regenerated, and rejuvenated earth. What a joyful time will that be, when, among all the habitations of men, there shall not be one case of avoidable death, nor one of avoidable sickness. Should not that be the work, the earnest aim of the medical profession?—Louisville Med. News.

Thuja Occidentalis.

BY D. W. S. VAN CLEVE, M. D., BELLEVILLE, ILL.

I HAVE been 28 days using the saturated alcoholic tincture of thuja on an old malignant scirrhous cancer, embracing the entire mammary gland of a large fleshy lady 64 years old. The cancer, extending from breast-bone to the armpit, measured 11½ inches by 6 inches. I had re-

moved the cancerous mass, etc., from over the breastbone and three ribs, for a space of 5 inches, but found masses of hair-like fibers imbedded in the bone, that all my endeavors failed to remove. I then applied thuja, which I was delighted to find had loosened the periosteum so it could be raised and clipped off, in 24 hours from first application. I continued its application, and gave it internally twice a day, and have up to this writing, with this result. 2d day I had the ribs for 3 inches, and across nearly the width of the breast-bone, bare and clean. 4th day found the 3d rib black, its thin edge and connection with the breast-bone completely detached. 5th day found the upper third of the sternum completely broken from the lower portion and sunk one-fourth inch. At each expiration the serum within the chest sprayed out, the 3d rib rose and fell one-third of an inch, rendering it impossible to use the silver plates, as I feared that this incessant working might slide them through this large opening into the cavity of the chest. Continued to use thuja, and sent electric currents along the ribs, and for three days applied the negative sponge, an inch in diameter to the naked investment of the lung. 8th and 10th day new osseous formation appearing along the ribs. 12th to 15th day rib and breast-bone fully united. From this time healthy granulations crept over the sternum and between the ribs, the osteal membrane forming over the repaired bones; and now, 28 days from first using thuja, I find the entire opening closed with clean healthy flesh. The patient is comfortable and not confined to the house.

I still use the other treatment required; using the thuja

drops and wash twice a day.

Grindelia Robusta.

BY C. G. POLK, M. D., PHILADELPHIA, PA.

GRINDELIA, although a new-comer into the medical world, has already acquired a high place as a therapeutical agent. It is eminently a demulcent tonic, with expectorant properties. As a remedy in chronic catarrhal diseases of the respiratory apparatus, as also in asthma, but little need be added to what has already been said; but in the writer's experience it has other provinces, al-

most as important. As a remedy administered by the mouth, the writer has found it of great worth in chronic catarrh of the uterus, bladder, and vagina. In combination with damiana, it forms an admirable remedy for these conditions. As a local application it has been found of great service. The writer has used it in the form of a strong decoction in leucorrhea, with very desirable results. The decoction is made in the proportion of four ounces of the plant to each pint of water; if the plant be not available, the fluid extract may be employed in the proportion of one ounce of the fluid extract to three of hot water, and the injection employed while warm. It may often be used with lime water or infusion of chamomile flowers, or with both mixed in equal proportions. For acute gonorrhea, this combination will be found to be vastly superior to the ordinary zinc and lead water injections. It seems to exert a peculiarly soothing influence upon mucous membranes, whether applied locally or through the stomach.

The writer believes that grindelia robusta is an agent of great importance in all diseases involving mucous membranes, and is destined to rank among the most valuable of the recent contributions to list of therapeutics. With yerba santa, the writer has found it of decided efficacy in pneumonic and tubercular phthisis; in chronic bronchitis the present 'esteem is just; in asthma its reputation is

established.

It is but just to add that the medical profession is indebted to the enterprising house of Parke, Davis & Co., for its introduction east of the Rocky Mountains.

The Ear Fungus--Aspergillus Nigricans.

DR. CHARLES H. BURNETT, in the Philadelphia Medical Times, June 22, describes a number of cases illustrating this form of aural disturbance. There are several forms of microscopic fungi found in the human ear, but the aspergillus nigricans is by far the most common. It collects in masses, adhering to the meatus and tympanum, and is commonly taken for wax and washed out. Greater irritation, however, is produced by the growth of the fungus than by the accumulation of cerumen. Its true character can be detected only by the microscope, under which it

presents various forms, according to the stages of growth. The presence of wax does not promote its production, but it flourishes on all kinds of abnormal accumulation. Glycerin does not dissolve it as it does the wax of the ear. Its presence is apt to cause pain, and sometimes to induce an eczematous condition. Dr. Burnett removes it by repeated washings with dilute alcohol. He says nothing of other applications, such as salicilic acid and its compounds, which one would think better calculated to destroy the vitality of the parasite, with less irritation to the membrane of the ear.

Burns and Scalds.

THE ALKALINE TREATMENT—ITS HISTORY. BY GEO. F. WATERS, DISCOVERER OF THIS TREATMENT.

WHILST reading a summary from Holmes' Manual of Surgery upon the treatment of burns and scalds, published in the Boston Journal of Chemistry for November, 1876, the idea occurred to me that there was something of importance known about burns and scalds, not included in that summary, which ought to be made public. These are the facts which came to my mind: In 1837 I saw a little sister, too young to talk, scalded with a solution of bicarbonate of potassa. A half pint of the solution flowed over her neck and chest. The water had just been poured from the kettle in an active state of ebullition, and before the kettle could be set down the little girl had done the To tear off her clothing was but the work of a moment, and the scalded surface was then covered for a short time with a cool calico apron. In two minutes she had stopped crying, and, looking into her mother's eyes, began to laugh. My mother thought it hysterical, and expected to see her soon go into convulsions. She made all haste to dress the surface with sweet oil and laudanum, with cotton batting over all; but the surface blistered before she could finish dressing it, the vesicles being quite small and near together. The next morning all signs of a burn were gone, except little white patches of desquamation where the bullæ had been. There seemed to be no soreness, and there was no after-trouble. So far as I know, there was at this time no thought of ascribing the wonderful cure to the saleratus in the water, and yet my mother

might have had such an idea. A story which she told at that time, of an old horse wounded in the side and turned out to take his chance of cure without care, would seem to imply as much. This is the story: a potash-factory was by the side of a pasture, and the horse would frequently go to the heap of leached ashes and nibble them. One of the workmen, disgusted at the sight of the gaping wound all alive with the larvæ of flies, dashed a ladle of hot lye into the wound, starting the horse and destroying the parasites; and the horse was in a few days cured of his wound and taste for leached ashes. This is really the first case of alkaline treatment—occurring as it did in my

mother's girlhood-of which I have heard.

When I read the article in the Journal of Chemistry all of the above cases came, as I have said, to mind, and I at once thought that there must be reasons for the pain in a burn other than the proximity of the air, and that the philosophy of the cure was in some way connected with the action of the alkalies. Experiment (on my own person) showed me that of all the alkalies bicarbonate of soda was the quickest and best and lime the slowest and poorest in action, potassa being between the two. Nature places them in their appropriate places in their animal system. Thus, take a cross section of any limb, and we find the bone (lime compound) central, surrounded by muscles (potash compounds), and the skin external, with its albumen associated with soda. During the winter of 1876 I made a study of the human saliva as found in the mouths of my patients, on the microscopic stage, with polarized light. There I found the lime compounds of a solution to first appear in a crystalline zone, followed by potash and stronger (acid) soda salts, as chloride and sulphides, etc., the bicarbonate of soda being the last to put in an appearance, and the whole mass on the slide seeming perfectly dry before a crystal of the bicarbonate of soda was seen. Thus bicarbonate of soda is shown to be in a fluid condition with a minimum amount of water, and bicarbonate and phosphate of lime to require a maximum amount. Here the microscope explains the philosophy of the position of the alkalies and alkaloids in the living body, as well as why bicarbonate of soda is the proper alkali to apply to the skin for any purpose. As we investigate we always found albumen in association with bicarbonate of

soda, or soda in some form, showing them free yet constant lovers.

In the winter of 1870 the late Dr. N. C. Keep recommended me to use for my eyes, which were suffering from overwork, the vapor of bi-sulphide of carbon. To apply it by means of an eye-wash bottle, holding the bottle by one hand so as to warm it, and thus to vaporize the bi-sulphide. In using it I found that as soon as the vapor began to form there was a sharp pricking sensation in the surface of the sclerotic coat exposed to its action, and that this surface soon began to show signs of inflammation, the small bloodvessels enlarging and carrying red blood. A natural desire to know the philosophy of its action led to a course of experiments, in which it was conclusively shown that the pricking was caused by the vapor entering the minute pores, arresting and severing the natural course of the flow of the contents, thus pressing upon the adjacent nerves, and continued pressure, causing continued backaction allowed the red blood disk to glide into the enlarged vessels. Applied to the skin, I found that it, and also chloroform and ether (sulph.), would produce all of the phenomena of a scald, even to vesication, if continued long enough.

mena. The volatile hydro-carbons produce their effects by pressure applied to the mouths of the pores, penetrating them and causing them to dilate and press upon the contiguous nerves, thus producing pain. Cold crystallizes the contents of the pores, and thus obstructing them produces its effects. Heat contracts albumen, hardens, stiffens, and thus closes the pores and produces pressure upon the nerves. The application of bicarbonate of soda gives its quick relief by dissolving or softening the albumen in or surrounding the pores, and, allowing the restrained contents to escape, relieves the pressure. That the pain is due to pressure is shown by the fact that position is all important in giving relief. Thus, a man came to me who had burned his hand with melted sulphur. He had scraped off the sulphur and washed with soap, and came with his hand in a wet towel, suffering intensely. By urging I got

him to stand still while I placed a half dozen grains of soda bicarbonate in his open palm; a drop of water added made a stiff paste, which at once removed the pain. Holding his hand up to the light, and gazing at it with looks

Cold applied to the skin may produce the same pheno-

of astonishment, he exclaimed, "By golly, I don't see how he does that." But as he turned to leave my office, and took hold of the door-knob to open it, he suddenly turned, exclaiming "It has all come back again." I explained to him my theory of pressure, and directed him to so poise the limb as to let the blood gravitate toward the heart. He had no more pain. Many other cases have come to me of a like nature, showing the same fact, and in the last (May) number of the Boston Journal of Chemistry they say we have met with only one unfavorable report concerning the new remedy. Dr. R. P. Oglesby states the case of his child in the Doctor. It seems that the child's hand was scalded by the steam from a kettle. The hand was treated by "placing it in a solution for nearly ten minutes." Now the position of the limb in this case was such that not only could no relief come, but even the blood-vessels would be dilated so as to make a pressure that would not quickly be relieved upon the limb being properly posed; but brought to a proper position for relief by gravitation, and having the contracting power of cold applied, it would have ceased to give pain in less than ten minutes, and I do not see why ten seconds would not have sufficed. (See the Journal, page 130.)

I had arrived at the conclusion that pressure was the cause of the pain, about the last of January, 1877. I now began a search through medical books and among friends to see if I had been working on old ground. I could find nothing that even hinted at my conclusions. It did not occur to me to ask Dr. White, although I frequently saw him at the meetings of the Boston Society of Natural History. In April I met Dr. William F. Channing, of Providence, and gave him, quite briefly, the results of my studies on the treatment of burns and scalds. He at once said that it was all new to him, and advised me to publish or make known the results of my investigations, as they were of too much importance to be allowed to repose in the possession of one or of a dozen persons. So I resolved to publish, as soon as an opportune moment arrived, which soon came at a meeting, in Salem, of the Massachusetts Dental Society. My essay was unwritten, and was delivered in the institute building on the 8th of June, 1877. Before eight o'clock on the morning of the 9th of June, a woman in this city read the report of the essay as printed in the Boston Daily Advertiser, and in half an hour had

a chance to try the cure. She was taking lemon-pies from the oven, a pie slipped from her hands, she sprang to save it, hit the edge of the plate in such a way that the pie was turned over upon her hands hot from the oven, bottom up; she turned it on the table, saved her pie, then quickly washing off the sticky stuff applied the bicarbonate of soda, which, as her good fortune ruled, was at hand at the table. It gave her immediate relief. She told a friend, who came to me with the story, that she could see the fire leave. No unpleasant results followed. Many such cases are constantly coming to my knowledge. I will close with a case of scalding with soap, which occurred in Concord, Massachusetts:

Mr. Cyrus Hapgood (then twenty years old, now sixty) was at work alone in a soap factory making hard soap, using barilla with bleached ashes lye. A sudden increase of heat caused the soap to boil over. He had on a coarse cotton shirt, open in front, with a button six or eight inches down from the neck. The top of the kettle was about breast high, and when the soap came over, a quart or more flowed into his bosom. He says the pain was awful, but he could not stop; he just leaned forward for a few moments and held his shirt off till it cooled a little, and then he went on with his work saving the soap, which was now done. At night he took off his shirt and soap and washed up; there was no soreness of the skin where the soap had been, and he suffered nothing from the soap-scald after it got cool. This was a year or so subsequent to my sister's scald. Mr. H. gave me the history of his case Sunday, May 12, 1878.

My treatment is to apply to the burned surface bicarbonate of soda in fine powder, if it is a wet surface; but if it is a dry burn, use a paste of bicarbonate of soda and water, or a strong solution of the bicarbonate of soda in water and apply to the burned surface. This relieves sunburns as well as burns from hot coals, melted sulphur, hot

iron, steam, etc.

N. B.—Always dispose the burned surface so that the blood can gravitate toward the heart if possible, as otherwise a continuous pain may be felt, due to the dilation of the blood-vessels from the weight of the contained blood.

If bicarbonate of soda is not at hand, bicarbonate of potash is the next best; biborate of soda does as well, but is not often found handy. Then the emulsion of lime-

water and oil makes a good dressing where the skin is broken. But vaseline is preferable, as there is no odor from it, and it is quite as bland.—Louisville Medical News.

Remarks on the Form and Contagiousness of Yellow Fever.

THERE is nothing more striking in the modern literature of yellow fever than the little advance it displays on the line of investigation and the mode of treatment followed by the numerous writers who recorded their experience and views at the beginning of the century. Now, as then, one body of medical practitioners regard yellow fever as presenting various forms, as arising from local causes and not from personal contagion, and as frequently appearing sporadically as well as from time to time in the form of a severe epidemic. Another body considers that vellow fever always arises from a poison given off by a person already laboring under it, as being a continued fever and never presenting a remitting or intermitting form, and as never appearing sporadically, or arising with communication either directly or mediately with a previous case; while they relegate the sporadic cases, every West Indian and many an American practitioner are familiar with, and the frequent occurrence of which can not be ignored, to what has been variously designated "remittent" or "malarious vellow fever"—a form said to present a very close resemblance to true yellow fever, including the yellowness of the surface and black vomit, but which may be distinguished from vellow fever by the non-occurrence of albumen in the urine. It is worthy of observation that the great majority of the members of the profession who have resided some years in the tropics, and had constant experience of vellow fever, entertain the first opinion, and it is only among those who have met the disease occasionally, or who have never been brought into contact with it, that the second is generally received.

Yellow fever is a febrile disease, usually terminating in convalescence or death from the fourth to the seventh day, but either may occur as early as the second day, or not before the tenth or twelfth, or even later. There is generally yellowness of the surface, commencing at various periods in different individuals or epidemics. Upon

the evening of the third day, or morning of the fourth. the urine usually contains traces of albumen, and on the latter a considerable sediment appears in it, almost wholly consisting of the scaly epithelium from the bladder; this is succeeded by an equally copious one on the morning of the fifth day, which consists almost exclusively of granular tube-casts from the kidneys, with scarce a trace of epithelium from the bladder. By this time the albumen has usually become considerable, the chlorides have been greatly reduced, and the urine as a whole is usually scanty, and may even go on to complete suppression. If there be much yellowness, the urine may contain a variable quantity of the coloring matter of the bile. The alvine discharges are devoid of the natural feculent appearance, especially from the third day onward till the disease gives way. As the alvine and urinary secretions assume these peculiarities, there is a great tendency to black vomit or discharges of similar matter from the bowels, or to the so-called hemorrhages from the various mucous surfaces, or even in some cases from the skin; and after death such may often be found in the stomach or intestines when not manifested during life. Such are the distinctive features of a normal case of vellow fever, but in some the occurrence of the urinary symptoms may take place earlier than here mentioned, and in others they seem to be delayed for a day or two; but whenever watched from day to day, and properly examined, it is found that the changes in the urine not only embrace the presence of albumen, but indicate desquamation of the bladder and kidneys as regular features of the disease. It is important to bear this in mind, for in some varieties of intermittent albumen has been found in the urine; but in such cases it occurred during the cold stage only, and went off as the fever came on, and was not preceded or accompanied by the desquamative process present in yellow fever, but which is not met with in either the pure intermittent or remittent.

1. Yellow fever is not a disease always presenting the continued form, but it is met with frequently as a remit-

tent, and even as an open intermittent.

2. The sporadic cases presenting yellowness of surface and black vomit are also found to have the train of urinary symptoms characterizing yellow fever, and are consequently identical with those met with during an epidemic.

3. In very many instances where persons in the vicinity of yellow-fever cases are attacked with the disease, the facts do not admit of the exclusion of local causes, and such instances therefore can not enable us to decide whether these causes or personal contagion have originated the disease; but from time to time other instances occur in which the exclusion of local causes can be assured, and in these, however extensive the exposure of susceptible individuals to the emanations from the sick may have been, the uniform result is that no communication of the disease has taken place.—Robert Lawson, Inspector-General of Hospitals, in London Lancet.

The Scraping-Spoon-Treatment by Erasion.

BALMANNO SQUIRE, of London, author of the "Atlas of Skin Diseases," has made what appears to be a very useful modification of the scraping spoon, which was originated by Volkman, of Halle, in 1870, for the treatment of lupus by erasion. The instrument is a very simple one—a mere scoop, attached to a handle. That of Mr. Squire has an oval form, and is dished rather more than an ordinary tea-spoon. The German instrument is circular and larger. Various sizes, however, are made, and the scoop is sometimes turned at an angle with the handle. The design is to remove, by mechanical means, the diseased deposits incident to lupus, epithelioma, scrofulous ulcers, and some other forms of disease—deposits which are ordinarily removed, if at all, by caustic, or the knife. The constant tendency of such deposits, says the article describing the instrument of Mr. Squire, is either by slow progress, to extend the area of their occupation of the skin, or by ulceration of their morbid structure, to lead to more or less extensive destruction of the skin, and, in some instances, of the subjacent tissues also. It has been found, as a matter of practical trial, that the removal of the diseased deposit, by the simple method of scraping it away, is, in many lesions, such as those above enumerated, quite sufficent to convert the diseased area into a healthy ulcer, which thereupon speedily heals up (namely, within from a week to a month, according to its extent), and so the cure of an obstinate and long-standing disease of months' or even years' duration, may often thus be rapidly accomplished. The employment of this method is especially facilitated by the circumstance, that in all of the lesions above particularized, the diseased structure is so extremely friable, that the readiness with which it crumbles away, under the pressure of the spoon, at once differentiates it to the sense of touch (as conveyed by the spoon) from the notable touch surrounding healthy textures, namely, from the circumjacent sound skin, and from the subjacent cellular tissue, so that the sense of touch materially aids the eye in distinguishing the unsound from the sound structure. In point of fact, it is impossible to remove any of the sound structures by means of this instrument, if the instrument be used with only moderate force; the extremely tough character of healthy fibrous tissue effectively precludes such a contingency.

The mode of operating with the scoop is extremely simple, requiring such application of it as is necessary to scrape away the diseased parts. Mr. Squire advises local anesthesia, by the ether spray, which prevents all pain. The subsequent dressing has nothing peculiar. Our English brethren may be surprised to learn that the operation has already been introduced in California. We have witnessed it in the San Francisco City Hospital, as performed by Professor Douglass, with marked success, in a case of adenitis, in which great quantities of degenerated glandular tissue were scooped out through orifices which had been produced by ulceration, and the cavities left to fill, by granulation from the healthy, new-made surfaces. Instead of waiting weeks or months for the removal

The London "Doctor"---The Revival of Mercurial Treatment,

of the diseased masses, by the slow process of suppuration, their removal was accomplished in a few minutes.

The London *Doctor* copies from this journal the report of the discussion in the San Francisco Medical Society on the use of mercury in syphilis, elicited by the paper of Prof. Barkan on syphilitic diseases of the eye, and adds that the remarks made by Dr. Gibbons, Jr., are "not quite a full description of Dr. Drysdale's views." The *Doctor* then goes on to state Dr. Drysdale's views as follows: "The evidence for its use in syphilitic iritis is so strong

that Dr. Drysdale gives it in that, and is also in the habit of giving small doses, very small doses, of the green iodide of mercury in the early stages, hard sore, and secondary eruptions (one sixth gr. twice daily with gtt. x tinc. fer. chlor.) in the hopes of warding off tertiary lesions. He does this in deference to the published views of Hutchinson in England and Fournier in Paris, both of whom allege that mercury is an antidote to syphilis. Although not convinced, Dr. D., as at present advised, is in the habit of using courses of this very small dose of mercury, and hitherto has done so without damage to the patients, all of whom have done pretty well under the treatment."

The statement which Dr. Drysdale thinks has not done

him justice was contained in this paragraph:

"Dr. Gibbons, Jr., called attention to the remarkable revolution which had taken place within a few years in the opinions and practice of the former anti-mercurialists. They had completely abandoned their opposition to mercury, and now acknowledged that the cure by the iodides and other preparations was but temporary. He mentioned Dr. Drysdale, of England, among others of this description."

The authority for this statement was the *Doctor* itself. In the number for December, 1877, under the head of a discussion at the Medical Society of London, after Dr. Drysdale had defined his treatment of syphilis, we read

as follows:

"Dr. Fothergill said it was fortunate that Dr. Drysdale was now beginning to use mercury in the treatment of syphilis. His experience was that if mercury was given in connection with iron salivation would not occur."

Mr. Brudenell Carter "had also come to the conclusion that courses of mercury cure syphilis. Iodide of potassium is efficacious only for a time, but it does not cure. A patient treated with the iodide will get well, but in some six months he will have a relapse; whilst, if put on a proper course of mercury he would be cured. In the army the use of mercury in curing syphilis is better known than in civil practice. In his own experience he had noticed that late syphilitic affections of the retina were apt to occur when the patient had not taken enough mercury.

. In reply to a question by Dr. Drysdale he (Mr. Carter) said he would give small doses of mercury with

iron for some nine months, in cases of secondary syphilis."

Mr. Bloxam "was also convinced that the use of the iodide of potassium was to prepare the way for mercury in syphilis. He approved of long-continued courses of

mercury, for twelve to eighteen months."

Dr. Thorowgood "had no doubt himself of the efficacy of mercury in the treatment of syphilis, even in cases of phthisical patients where syphilis was present. He was glad to know that Dr. Drysdale had become a mercurialist, and had the boldness to avow it now, even at this late hour."

Dr. Drysdale in reply said . . "he was glad to hear the experience of the Fellows as to treatment, and he

should follow the advice tendered."

Now we ask the reader if all this does not establish two points: 1. That the conclusions deduced by Dr. Gibbons, Jr., from the discussion, were perfectly fair and legitimate; and, 2. That Dr. Drysdale has backed out of the position he then occupied?

But we are not quite ready to part with our excellent friend and collaborator, Dr. Drysdale. After copying the discussion in the San Francisco Medical Society, he adds:

"We rather suspect that both mercury and bleeding have seen their palmy days, which will never be resumed. At present the habit of correct observation brought into vogue by the modern use of instruments of precision forbids the supposition that we shall ever again see the days of 'schools' of drug therapeutics. Mercurialists of the type of John Hunter or his contemporaries can not possibly reappear, and even Spain and Italy will be obliged to put aside their Sangrados and barber-dentists. Primum non nocere is the motto of the modern therapeutist. The question of when mercury should be used in syphilis is the main question to be resolved in this department of drug medication. It is being silently debated all over Europe by men like Lancereaux, Fournier, Berkeley Hill, and Hutchinson, and before the end of this remarkable century it is possible that mercury may have its present rather restricted place in the pharmacopæia of nations as an internal remedy in disease still further restricted and made yet more precise."

We fail to perceive any argument in this paragraph. To "rather suspect" carries but little weight in medical or any other kind of logic. As to "schools of drug therapeutics," we no more desire them than does Dr. Drys-

dale, neither do we want what he seems inclined to, a school of anti-drug therapeutics, after the "Eclectic" fashion. "Primum non nocere" is a miserable motto. It belongs to homeopathy. The question of the use of mercury in syphilis is already "resolved," if authority and experience can resolve anything. How it can be "silently debated" we do not comprehend. That "it is possible" that the use of mercury will be further restricted in the future is the safest kind of an opinion, and we propose to balance its weight by the opinion that the opposite is equally possible.—Pacific Med. and Sur. Jour.

PROCEEDINGS OF SOCIETIES.

American Academy of Medicine.

Third Annual Meeting, held at Easton, Pa., September 17 and 18, 1878.

REPORTED BY CHARLES M'INTIRE, JR., M. D., ASSISTANT SECRETARY.

THE Academy met in one of the lecture-rooms of Pardee Hall (Lafayette College), at three o'clock on Tuesday afternoon. Frank H. Hamilton, M. D., LL.D, the President, in the chair. The Rev. Wm. C. Cattell, President of Lafayette College, opened the meeting with prayer, and the address of welcome was pronounced by Dr. M'Intire, one of the

Fellows of the Academy.

The names of forty-five candidates were presented to the Academy by the Secretary for election to fellowship. These names had all been approved by the Council as having the proper qualifications. Several names were not approved because the candidates had not complied with all the requirements of admission. The names proposed by the Council, who were duly elected Fellows of the Academy, are: Drs. W. R. Cisne, Laertus Connor, J. V. Schoemaker, Frank Fisher, R. J. Dunglinson, Horatio C. Wood, Albert H. Smith, J. G. Gerhardt, G. J. Fisher, E. J. Birmingham, W. H. Ford, W. H. Allen, E. J. Santee, V. P. Gibney, G. H. Fox, James Tyson, Geo. M. Beard, Nathan Hatfield, A. B. Judson, J. H. Fruitnight, D. B. St. John Roosa, H. Lemuel Hodge, John Reyerson, J. M. Scott, — Dyer, P. L. Schenck, Alexander Hutchins, William

M'Kenzie, O. F. Harvey, C. K. Wagner, W. C. Schultze, John A. Thacker, E. H. Wood, John Sandt, J. J. H. Love, Isaac Ott, G. D. Strahley, R. J. Hess, J. W. Moore, John Schrady, D. A. Dodge, W. F. Taylor, T. M. L. Christy, G.

F. Schrady, and C. J. Thomas.

The Committee appointed to prepare a seal and certificate of membership made their reports, which were received. President Cattell extended an invitation to the Academy to visit the library, laboratories, and museums of the College, which was accepted with the thanks of the Academy, and Wednesday morning designated as the time.

EVENING SESSION.

This session was taken up with the address of the President, Dr. Frank H. Hamilton, of New York City. He began his address by quoting from the Constitution the objects of the Academy: "To bring those who are alumni of both collegiate and medical schools into closer relations with each other; to encourage young men to pursue reg ular courses of study in collegiate institutions before entering upon the study of medicine; to extend the bounds of medical science, to elevate the profession, to relieve human suffering, and to prevent disease." The founders of the Academy, he said, sought to aid others who were striving in the same direction, but with different methods, i. e., to correct the imperfect preparation of medical students, which, as a consequence, makes the results imperfect. He proposed to discuss the nature and extent of the evil, the consequences, and will our organization aid in effecting a cure?

An examination of the methods of medical education reveals two plans of procedure—the one pursued by the English-speaking nations, the other by those speaking other languages. In the latter class a thorough preliminary education equal or superior to the course prescribed for an A. B. degree, with us, was required; the curricula are graded, advancing by examination; four years is the minimum time required; in some States it is seven; the professors are salaried, independent of the fees of the students; and the final examination conducted by inde-

pendent boards.

In Great Britain, her Colonies and the United States the condition is very different; although in the last few years an advance has been made in England. Our system of

medical education is derived from that of Great Britain, and because it has no governmental control as to the number of licensing boards, has produced the worst type the system can produce. This may be seen in the fact that Germany, with a population corresponding very closely to our own, has one medical college to every 1,800,000 of population, and one physician to every 3,000; while in the United States every 500,000 people have a medical college, and one doctor to every 600. "Here there is an industry in which we have led the world—the manufacture of doctors—but notwithstanding our great supply, there is little or no foreign demand; the quality of the article is not desirable."

For the sources of the evil one must go back to the beginning. Inheriting the peculiar medical training of the mother country—each State reserving the right to charter as many schools as it desires, little or no requirements demanded in order to obtain a licence to practice, with a people and a profession easily satisfied—for our colleges give as good an article as the people and the profession demand—these things working together have produced

the present condition of affairs.

Where is the remedy? It is contrary to the policy of the General Government to take any action in the matter. In one instance at least there is a State endowed school, and here the State interference has done harm to sound medical teaching. So the help can not come from these sources. Can it come from the medical colleges themselves? With a very few exceptions, the professors and teachers of our medical schools are men of intelligence and of practical experience; but from the very condition of affairs most of the medical institutions are, so to speak, private corporations; so that anything tending to diminish the number of students will cause them to close their doors; and it can not be expected that they will pursue a course so suicidal in its tendency. Even the few colleges who have begun to improve their course do so slowly and with halts. Indeed, the public have no right to complain; they have no right to demand more than they have paid for. The only remedy is a full endowment of the college, so that, being independent of all student tees, the course can be so regulated as to bring about the best results, and the superiority of the course so manifest that its diploma will be more valuable, so that the people

will demand one of equal grade from their physicians. In the meantime we of this Society can endeavor to create opinion, especially among those who are to enter upon the study of medicine; and as the physicians all over the country are beginning to see the nature of the evil, we

have put our hands together to help them.

There is a bright side to the picture which ought to be expressed. Many of our men have as good qualifications as those abroad. The world is surprised at our system of education, but it has not contempt for our physicians. Possibly we have of thoroughly qualified physicians as large a proportion to the population as elsewhere.

WEDNESDAY MORNING.

Most of the morning was taken up in the discussion of proposed amendments, which will be voted upon at the next meeting.

The following amendment to the by-laws was adopted: "All papers to be presented to the Academy must be submitted to the Secretary of the Council thirty days before the meeting, and may be read after they have been approved by the Council."

The Committee on Nominations, who were appointed on

Tuesday afternoon, made the following report:

For President, Dr. Lewis H. Steiner, of Maryland.

Vice-Presidents, Drs. R. L. Sibbert, of Pennsylvania; A. M. H. Sell, of New York; G. R. Larison, of New Jersey; R. S. Sutton, of Pennsylvania.

Secretary, Dr. R. J. Dunglinson, of Pennsylvania; Assistant Secretary, Dr. Charles M'Intire, Jr., of Pennsylvania.

Treasurer, Dr. N. M. Baldwin, of New York.

These gentlemen were duly elected by the Academy.

The President appointed as two additional members of the Council Drs. P. D. Keyser, of Pennsylvania, and G. F. Schrady, of New York.

A vote of thanks was tendered to the authorities of Lafayette College for the use of their rooms and their

courtesy.

The newly elected President was conducted to the chair. And, on motion, the Academy adjourned, to meet in New York on the third Tuesday of September, 1879.

After adjournment, the Fellows visited the extensive laboratories, etc., of the College, and were very much pleased with the completeness of the "oufit" for educational purposes.

Transactions of the Jersey County (III.) Medical Society.

REPORTED FOR THE "MEDICAL NEWS."

At the August meeting of the Society, Dr. H. Z. Gill delivered an address on the subject of "Fractures," saying that the diagnosis of fractures is properly considered under the following classification of symptoms, viz:

I. Deformity. Comprising, among other things, short-

ening or lengthening.

Deformity may or may not be easily recognized, because it may or may not exist; and it may exist, but in very slight degree. It is not peculiar to fractures, for it also belongs to dislocations. While it is very easy to make out a fracture, complete and with ordinary amount of deformity in the middle of the femur, yet there exists great difficulty in diagnosing a fracture in the immediate vicinity of a joint, even when taking all the signs into consideration.

II. Unnatural mobility or immobility.

In order that mobility exists, the fracture must be (1) complete, and (2) not be impacted. [See Milo A. McClelland, p. 399.] Manipulation may be necessary to develop mobility.

III. Crepitus.

That crepitus may exist the fracture must be complete, must not be impacted, and the ends must be brought into

apposition.

With regard to treatment, the preparatory measure consists in arranging a suitable bed. Circumstances being taken into consideration, what would be expedient for the rich would not be practicable among the poor. But the demands of fracture cases, particularly those of the lower extremities, are that the bed should be sufficiently firm and level. As to the primary, or initial bandage, the Doctor said he most earnestly agreed with Brainard, Ashurst, Erichsen, Syme, Hamilton (Trans. Am. Med. Asso. 1877), N. R. Smith, and McClelland, and against Gross and Gangee; that the initial bandage is unnecessary, frequently hazardous, and, would add, has been the cause of the loss of more limbs, from gangrene, and suits of law arising therefrom, than all other causes combined. Abandon it altogether.

Next, as to reduction. What is it? Here the Doctor brought in some evidence that had been rendered in the Jersey County Commissioner's Court, in the case of Gill vs. County. The testimony was introduced by the Doctor to show that a careful review on this subject is needed by a class of professional gentlemen who are always ready to testify on any subject, as expert witnesses, whether they are erudite in the science or not. The testimony in question was rendered by a physician, who said:

"In setting, drawing out would be all that would be needed, and counter-extension. The fracture should not

be interfered with after setting."

Question. "Is readjusting necessary or not?"

Answer. "There might be need of it—it might be necessary"

Question. "Is the replacing always exact?"

Answer. "It (meaning a fractured leg—Rep.) was not set unless it was."

Question. "Is it possible to place the parts in the exact former position?"

Answer. "About the same position."

Question. "If the bones were not brought end to end, correctly or exactly, would that be setting?"

Answer. "That would be an attempt at setting."

Other testimony was introduced in rebuttal of the above, when the Doctor proceeded to discuss the philosophy of the reduction of long bones, demonstrating the impossibility of complete reduction, in several instances cited. In certain fractures, where there was considerable deformity, but where the periosteum remained intact, reduction was prevented by the unyielding nature of the periosteum; and complete and exact reduction is out of the question, in fractures occurring in such locality, that one fragment of the bone is drawn in one direction by one set of muscles, while the other fragment is drawn in an opposite direction by an opposing set of muscles.

In reference to the time for setting, the Doctor again introduced some testimony, that of another physician, but rendered at the same trial, in which it was set forth, that any time within three or four days would do in which to

reduce the fracture.

On this point Hamilton says: "As soon as possible;" Erichsen says, "At once;" Prof. Henry H. Smith, "As soon as possible;" Gross, "Earliest possible attention;" Ashurst,

"As soon as possible;" Hodges, "As early as possible;" Milo A. McClelland says, "Failure to reduce a fracture at once would constitute negligence;" Gordon Buck, "The sooner the better;" Sayre, "As soon as it is possible to do so."

The Doctor then reviewed the various apparatuses now in vogue for treatment of fractures, and, after discussing the merits of each, offered the following resolutions, which

were adopted seriatim by the Society:

1. "Reduction or setting is to be effected by moderate means, judiciously applied, namely, by extension alone. The fragments to be placed into their normal position, 'as nearly as practicable or possible.'

2. "Make the reduction 'as early as possible."

3. "Maintain the reduction by continuous extension and counter-extension, and by splints, or immovable apparatus,

prevent angular deformity.

4. "If the immovable apparatus, of whatever form, should be used before the swelling has materially subsided, it should be done with much care, using padding over the entire limb, and especially freely over the site of the frac-

ture, and over the prominent bony points.

5. "The treatment by the adhesive straps, weight and pulley extension, elevation of the foot of the bed, for counter-extension, and local splints, or immovable apparatus, is a method simple, cheap and effective; and when properly managed is capable of producing results equal to any other.

6. "The suspension apparatus of the late Prof. N. R. Smith, of Baltimore, as modified by Prof. John T. Hodgen, is also an excellent apparatus, requiring perhaps more skill in its proper management, but giving greater facility

to the movements of the patient.

6. "We think the positive statements of Gross and Sayre, as to the exact co-aptation of the fragments and normal length of the limb, in adjustment, should be modified, somewhat, in accordance with the teachings of Erichsen, Hamilton, Ashurst, Milo A. McClelland, and other recent writers."

MICROSCOPY.

The Use of the Microscope.

BY GEO. E. BLACKHAM, M. D., DUNKIRK, N. Y.

MR. L. R. PEET, of Baltimore, Md., to whom we are indebted (if I mistake not) for much valuable information in reference to the processes of double staining, has in the May number of the News, an article under the above caption which I was right sorry to read. He divides those who purchase microscopes into groups of twenty or so, and asserts that nineteen out of every twenty get sick of their bargain in from three weeks to three months after their purchase. Those who continue to use the instrument he divides into four classes—only one of which uses the microscope as he thinks it should be used.

1st. Those who use it merely for pleasure.

2d. Those who are "smitten with the mechanical aspect of the thing." Of such a one he writes that "he is at once infected with an ambition to become an adept in the lore suggested. He wants to know. the comparative merit of the work of celebrated makers, the prices each charges for his work, . whose is rated least defective in point of chromatic aberration, whose in the matter of spherical ditto," etc.

In short, according to Mr. Peet, this absurd twentieth, this exceedingly improper fraction, having bought an instrument to the making of which has gone a high degree of mathematical and technical skill, becomes possessed of an insane desire to know all about it; nay, more, he may even go so far as to suggest an improvement or two.

Another goes farther; buys a *Moller typen platte*, and learns the names of the diatoms whose silicious coverings are thereon embalmed; nay, he buys test objects and tries to resolve them, and either writes himself or reads what others write about angular aperture and definition and things; and, dread warning! "he becomes at last plethoric with microscopical technology, and that is his mental seeding."

This is truly dreadful; and Mr. Peet sadly exclaims: "The number of the above sketched is too large." And they "sneer at him who merely seeks to make the instru-

ment a help to see." Too bad, too bad. How do the ungodly flourish! These miserables, who have squandered their time in riotous living, with catalogues and books on optics and tables of logarithms and typen plattes and what not-they "sneer at him who merely seeks to make the instrument a help to see," who regards it, so to speak, as a pair of brass-mounted spectacles; and knowing that this latter and eminently commendable person has never bothered his head over abstruse questions of angular aperture and chromatic and spherical aberration and definition of the edges of things. They say: "Oh, he does not know anything about the microscope; I would not give a snap of my finger for what he might say about it." Alas! too true. I have seen such men myself. Obstinate are they, refusing to believe that a man who has never given any time to the study of this marvelous instrument can be competent to form a valuable opinion about it.

Let us turn from the contemplation of this sad spectacle of human depravity to the more agreeable view presented by the fourth twentieth, the one man out of fourscore, whom Mr. Peet "thinks uses the microscope as it should be used," but whom with undue modesty he protests is not himself. What has he done? "He has made sure that his higher powers enable him to see things as small as the markings of amphipleura pellucida, and that his lower powers have clean, level fields." And "then he has learned to make plain slides, and has gone at it with abiding zeal; and he wants to know about "the denizens of the stagnant pool, about the structure of insects and their embryos and that of plants. The three months that operated so disastrously on the nineteen he has made use of to become accustomed to handling this new and astonishing aid to sight, and to learn the art of mounting objects. He has then begun to gratify his impatient desire to know, a most virtuous and commendable course truly, and in pleasing contrast too,

> "The ways that are dark, And the tricks that are vain,"

of those who have squandered their time in "contemplation of the ingenuity evinced in the structure" of the microscope, or in seeking out the true inwardness of spherical or chromatic aberration, or in striving to resolve the catalogue lists of tests. And yet one wonders how "he has made sure that his higher powers enable him to

see things as small as the markings on amphipleura pellucida, or that his lower powers have clean, level fields," unless he, too, has given some attention to the catalogue list of tests and spherical aberration and the definition of

the edges of things.

But seriously, is it not time to abandon this idea so persistently set forth that it is in the study of "natural history only that the microscope can be legitimately used? Is it not time to admit that the microscope has gotten beyond the spectacle stage, and that to use it intelligently one must look into it as well as through itmust study the principles upon which it is constructed, must know something of chromatic aberration and of spheral ditto, with their causes and the effects they have upon the definition of things? Have not the labors of those who have given attention to these things been to the advantage of those who paid no attention to them, and whose microscopes have been to them "only helps to see?" And even if it were not so, is not the science of optics as legitimate a field of intellectual research as biology? And if a man chooses to use his microscope to study out its own anatomy and physiology, so to speak, instead of "the structure of insects and their embryos," who shall say him nay?

And why should he not "reduce to elements the outside morphology of fossil diatoms" as well as the inside morphology of the "denizens of the stagnant pool?" And even the man who uses his microscope for entertainment only, and who never makes it teach him anything (if such a man there be), has he not a right to do what he will with his own? Yes, truly; and let us rejoice that he

chooses so rational a means of entertainment.

In short, is it not time for certain specialists to give up the narrow view that their specialty is the only legitimate study in the world, and to remember that but for the studies and labors of those who have given their attention to the optical and mechanical structure of the instrument and the use of test objects, etc., the instrument he uses to-day would never have come into existence; and to admit that this much contemned class may be doing nearly as much for microscopical science as those who devote their time to the production of mounted sections. "just too lovely for anything," and which often rival Jo-

seph's coat, not only in the variety and brilliancy of their eyes, but in their value as objects for scientific study.

AWARD OF GOLD MEDAL FOR OBJECTIVES.—We are happy to announce that we have learned that the objectives of Messrs. Chas. A. Spencer & Sons, of Geneva, New York, have been awarded the highest prize, a gold medal, in class fifteen, for objective glasses at the Paris International Exhibition.

The objectives exhibited at Paris were made at Geneva, New York, and sent in charge of President Barnard, of Columbia College, New York. The circumstances attending this successful exhibition are very gratifying to Mr. Spencer, his sons, and their many friends. Mr. Spencer says that their application for space, although made long after the designated period had passed, was granted by Commissioner General McCormick, and although their objectives reached Paris a month or more after the opening of the Exhibition, yet they were admitted for competition and carried off the prize.

That American objectives should receive the highest award for excellence in a European exposition is far more than we anticipated, however superior they might be. Europeans are not in the habit of yielding the palm to Americans. The Messrs. Spencer may well feel proud in being adjudged above all competitors of the world, the most skillful artisans of an instrument that requires more scientific ability than any other in its manufacture. And we feel confident that every American scientist will join

with them in the pleasure they feel.

GLEANINGS.

Lactopeptine.—Pepsin is unquestionably a valuable remedy in some cases of indigestion, but does not seem to meet all the requirements of many dyspeptic cases. Lactopeptine is presented to the profession as meeting all the indications in cases of mal-nutrition and non-assimilation, composed, according to the formula, of ptyalin, pepsin, pancreatine hydrochloric and lactic acids. It is claimed to be a combination of all the digestive agents. If we can prescribe chemically for disorder of the digestive

function, such a combination would appear worthy of trial, and experience has demonstrated its value in many cases. Dr. Merritt remarks: "The more my experience in its varied applicability extends, the more its beneficial effects appear."—Buffalo Med. and Surg. Jour.

Variolæ Anomalæ.—Dr. Collie read a paper before the Epidemiological Society, entitled "Variolæ Anomalæ" (Sydenham), with suggestions and reflections. He began by stating the object of his paper to be "to notice some points in which the recent epidemics resemble the great epidemics of the past; to call attention to the inefficiency of the existing vaccination law, and the grave dangers which may be incurred if this inefficiency be permitted to continue."

After giving details of two cases of hemorrhagic smallpox, one following an attack of scarlet fever, the other an attack of enteric fever, in both of which death took place suddenly, and without any warning, he went on to show how closely such cases resemble the accounts of the black death of the middle ages, as given by Vinario and others. To his mind there was no doubt that black small-pox and black death were identical; and he further thought that black small-pox formed the chief part of the plague of Athens, so graphically described by Thucydides. In recent epidemics, as well as in the present one, there had been a large and increasing proportion of black cases, and, should vaccination be neglected, Dr. Collie thought that small-pox might again assume its mediæval virulence. He stated that black small-pox occurs invariably in unvaccinated persons, or in persons who have not been revaccinated since fifteen. He then gave the history of a case of what appeared to be, from the eruption, mild smallpox. The patient, aged twenty-one, had two good vaccination marks. Death occurred an hour after admission. The post-mortem examination showed that the anterior part of the corpus striatum, and the whole of the right hemisphere were plowed up with blood. So far as he knew, this was the first case of the kind on record. Then followed a case of confluent small-pox, with extensive hemorrhage into the vessicles, in a female, aged sixty, with no evidence of vaccination, in which, contrary to expectation, recovery took place. With regard to the compulsory vaccination laws, he thought that compulsory

laws, which are, practically, not compulsory, were ridiculous; and that, as regards vaccination, such laws served to retard, rather than to advance, its progress. Dr. Collie concluded by saying, that no vaccination can be held to be efficient which did not include re-vaccination about puberty; and that vaccination should be the business of the State, and be performed by specially-trained State officers—private practitioners, except in exceptional circumstances, being interdicted from vaccinating.—Brit. Med. Journal.

THE FORCEPS IN MIDWIFERY .- Mr. Rigden read a report, in the Southeastern Branch Medical Society, of the last two hundred obstetric forceps cases that had occurred in his practice during the last eighteen years-the proportion being about seven per cent. of the total number of labors. The forceps cases had been generally those in which there was either considerable inertia, or marked disproportion, and yet there had been no maternal death, but nine still-births. He advocated the more frequent use of the forceps than was generally taught, the object being to assist, and not, as some practitioners imagined, to interfere with nature. His experience had taught him that the dangers of the forceps were not in its early use, where there were no contra-indicating circumstances, but in the delay in its application, as the operation certainly prevented much additional suffering and anxiety to the mother, and was a preservative of the life of the infant. His practice was to make as little ceremony as possible about its application; generally to have the forceps with him, if likely to require it, and to inform the patient that there was no danger in its careful employment. He deprecated the delay, as well as the alarm, caused to the patient and her friends by calling in further advice, or by making much ceremony about the application. He believed that obstetric practitioners are now, much more than formerly, in the practice of using the forceps; and his object in bringing the subject before the meeting was to instill more confidence in its employment.

Dr. Lewis thought that the use of the forceps, once in fifteen cases, was unnecessary, and that the interference

was excessive.

Dr. Bowles was of opinion that the forceps was more frequently used at the present day than it was a few years

ago; and that this earlier and increased use of the forceps was justified by experience.

The general feeling of the meeting coincided with this

view .- Brit. Med. Journal.

CALOMEL AS A MEDICINE.—Dr. Lanchester, in the Southeastern Branch, East Surrey District, Medical Society, in some remarks on calomel as a medicine, after stating that fashion had been against calomel of late, remarked that its evils had been exaggerated, and, in attempting to do without it, we were depriving ourselves of a useful medicine. Calomel was spoken of as an alterative, but its best known effect was purgative. As a cholagogue, there was no increase of bile, or stimulation of liver; and the bile, after its use, was due to rapid action, preventing the ordinary changes of bile in the colon. As an antiphlogistic, he contrasted Sir T. Watson's "sheet anchor in inflammation" with Mr. Holmes' "no power to resist inflammation, but induces cachexia, which prevents adhesive formations." Calomel was diaphoretic, diuretic and sedative; useful as a purgative in children, from small dose, and freedom from color or smell. He found it very useful in gastric catarrh, with rapid pulse and rise of temperature; in dentition, with confined bowels; convulsions, with throbbing fontanelle; and in croup; and, with other aperients, in worms. In adult life it gave great relief in sluggish liver, in gouty persons, in cases simulating puerperal fever, urgent sickness in peritonitis, in red and ædematous throat. In congestion of the liver he advocated its use as a convenient purgative, not continued. In acute gout and rheumatism he gave a full dose at the commencement. In syphilis he gave a course of mercury, and, in this way, it was stated to be a means of warding off megrim. He relied upon the drug principally for occasional use, but was loth to practice the continued use of a medicine which was not a natural constituent of the blood. Brit. Med. Journal.

ICE IN THE RECTUM TO COMBAT CHLOROFORM NARCOSIS.—According to Dr. Baillee there is no more active remedy in the narcosis caused by chloroform than the introduction of a piece of ice into the rectum. A moderate pressure suffices to overcome the resistance of the sphincter.

The ice melts in the intestine and immediately a deep respiration is produced, the precursor of natural respiration and of the re-establishment of the cardiac functions. Mr. Baillee recommends the same means in cases of apparent death of the new-born.—Revue Ther. Med. Chir. et Arch. Med. Belges.

Enuresis of Children.—In the chronic enuresis of children from six to twelve years of age, due to hyperæthesia of the bladder, Dr. Vecchitti has employed chloral hydrate with excellent success. He administered it at bedtime, in doses of from nine to eleven grains.

BOOK NOTICES.

Congenital Occlusion and Dilatation of Lymph Channels. By Samuel C. Busey, M. D., Professor of the Theory and Practice of Medicine, Medical Department of the University of Georgetown, etc. 8vo. Pp. 187. New York: Wm. Wood & Co. Cincinnati: Robert Clarke & Co. 1878. This volume is, for the most part, a republication of a serial contribution to the American Journal of Obstetrics, and is the result of an effort to study and analyze the complex phenomena of a case which the author met in July, 1874.

The author has expended a vast amount of time and a great deal of labor in his researches, in studying this very novel affection and the phenomena attending it. During the past three years he has examined several hundred volumes and pamphlets; read, and, for the most part, copied 3,000 pages of manuscript. Great credit is due him for his patient and laborious efforts, to gather together for the profession all the information position appoint the subject; and we hope a due appreciation of his industry will be exhibited by medical men, by the purchase of his work. In none other can be found so full and thorough an elucidation of the subject. Besides presenting the results of his own observation and study, the author has compiled from the writings of all others who have written upon the subject.

ELEMENTARY QUANTITATIVE ANALYSIS. By ALEXANDER CLASSEN, Professor in the Royal Polytechnic School, Aix-la-Chapelle. Translated, with additions, by Edgar F. Smith, M. D., Ph. D. With thirty-six illustrations. 12mo. Pp.

328. Philadelphia: Henry C. Lea. Cincinnati: Robert Clarke & Co. 1878.

This work has been adopted as a text-book in the laboratories of almost all the prominent German universities and polytechnic schools. It has also been received with

favor in France, Russia and Poland.

The preface very well describes the scope of the work: "Commencing with simple determinations, followed by separations, including quite a number of important alloys, and then advancing to the analysis of minerals, and such products as are met with in the many departments of applied chemistry. The methods employed in the various determinations and separations are such as can be used at all times—care having been taken to exclude all that have but a very limited use."

All students of chemistry, purposing to become practical chemists, and not proposing to limit their knowledge to the theory of the science, will find this a most valuable work and well suited to their wants. It is entirely free from discussions; but contains brief, but sufficiently full directions for all the manipulations in making quantita-

tive analyses of all the various compounds.

A CLINICAL HISTORY OF THE MEDICAL AND SURGICAL DISEASES OF WOMEN. By ROBERT BARNES, M. D., London, Censor of the Royal College of Physicians, etc. Second American, from the second and revised London edition. 181 Illustrations. 8vo. Pp. 784. Philadelphia: Henry C. Lea. Cincinnati: Robert Clarke & Co. 1878.

The work of Dr. Barnes has become a standard work in the department of medicine to which it is devoted. No other gynæcological work holds a higher position—having become an authority everywhere in diseases of women.

The second edition has been subjected to conscientious revision. By pruning redundancies, and by rearrangement, space has been gained for the addition of new matter. The size of the book has not been increased; yet room has been found for a new chapter on the relations of bladder and bowel disorders to the proper subject-matter of the book.

The work has been brought fully abreast of present knowledge. Every practitioner of medicine should have it upon the shelves of his library; and the student will find it a superior text-book.

EDITORIAL.

To Subscribers.—It is the intention, at the beginning of the coming year, to enlarge the Medical News by the addition of eight pages to each issue without increasing the price. This increase will make a volume in round numbers of a thousand pages. At the low price of \$2.50 a year the Medical News will be much the cheapest medical journal published. May we not hope that our subscribers will show their appreciation of our efforts to afford them the cheapest and best medical journal published by exerting themselves to increase our circulation? There is not one who now takes the News who could not send us one or two new subscribers by a little exertion.

We regret to say that a number of subscribers are considerably delinquent in their payments. Those who take a medical journal should either pay for it or direct it to be discontinued. This is the only honest and honorable course. Those who are behind with us should inform us

whether they intend to pay or not.

To those not now taking the News, but desiring to become subscribers, we will agree, on the receipt of \$2.50, to send the journal from this time to the end of 1879. In other words, we will make no charge for the remaining numbers of 1878.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.—The fact can not be gainsayed that persons are admitted to our medical colleges as students who are without sufficient capacity to learn, nor can it be denied that a large per centage of all our medical institutions graduate persons who do not possess the requisite character, knowledge or learning for members of a learned profession. This practice, fostered by the rivalry begotten of an over-supply of medical schools, has grown into an abuse, which, if not checked, will ultimately make the medical college diploma of this country the laughing-stock of the nation. This Association, composed of twenty or more of the medical colleges of this country, is supposed to have some relation to the reformation of this abuse; but as it has published no declaration of principles aside from articles of confederation, and these lack in affirmation, we are at a loss to determine its purposes or how it is to be made

effective. That the reformation is desirable, and even demanded by our obligations to society, no one will deny; and that it must be brought about by the well-defined concurrent action of all the leading colleges of the country, seems to be evident.

We have read the articles of confederation of this college association, and regret that there is in them so little to encourage the friends of true reform. They strike at no abuse affecting society. They propose no reform that will give to society better educated physicians, but they do create a close corporation, fighting for supremacy and at war with everything outside. Let us look over these articles, and see where the reform, if any, is provided for.

Certainly not in Article 1st, for no regular medical college in the United States violates it. Not in Article 2d. Sec. 1st, for no student in any regular medical college of this country, since the organization of a college, has been graduated who had not been taught all these branches. In this connection there should be; but nothing appears to condemn the abuse of diverting the attention of the student from these essential topics to the hundred and one specialties organized and being organized, ranging all the way from head to heel, and made a part of the college curriculum. These, as taught in medical colleges, serve only to advertise the learning and the skill of the professor, who tacitly says to the student, "when you find a case send it to me." Section 2d of this Article, as illustrated by the College of Physicians and Surgeons of New York, is but a cheat and a fraud. Here, according to the announcement, the session is from October 1st to the following March, but a careful examination shows that any student in this college, which is one of the confederated, may be excused from attending lectures during the first eight or nine weeks of the session. The right to do this would permit excuses at the other end or between the ends, or permit persons to become students in the medical department of Columbia College without attending any lectures. This being true, competition will compel the sister schools of Cincinnati, Chicago, Louisville, etc., to do the same.

Heretofore colleges have required three years' study before graduation, but these confederated colleges may graduate in two years and nine months. Then take the article on fees, and it will be observed that each college may be compelled to turn away from the class the poor young

man who has risen from the humble walks of life to possess the honors of a literary college, and then admit, fresh from the plow, the spade or the stable, one who has neither qualification nor capacity—because the former is without friends, the latter can pay for tickets. Truly this is a reform that needs reforming. The history of this Association, as now organized, can not widely differ from the history of that close communion church into which harlots rush, some seeking full communion, others entering on probation, but all expecting the word reform to shield them from observation and suspicion while they continue to ply their vocation. The friends of true reform should make haste to enter this Association, rescue it from the selfish schemers who now control it, and, instead of being a mutual protection company, make it an Association powerful to shield society from the misery resulting from incompetent physicians. Then, and not till then, will it enter upon a course which will elevate the medical profession in the estimation of the other learned professions, and meet the demands of society.

Spermatic Truss.—In our advertising pages is an advertisement of what is termed a "Spermatic Truss." We have examined the instrument and studied its action; and from our experience with an instrument that we some years ago devised, which operated very much upon the same principles, but not near so perfect in construction as this one, we can confidently recommend it to the profession as an excellent devise, which will be found very effectual in the treatment of spermatorrhea. With the exception of the administration of tonics to build up the system (for many of the victims of spermatorrhea become broken down in health), it does away with the necessity of any medication or application of caustics to the urethral mucous membrane. Whatever inflammation or irritation there may be anywhere in the course of the urethra, and which may be causing the emissions, will very soon subside of itself when these have been interrupted, and this instrument will certainly do it in a large per cent. of cases.

THE MICROSCOPE IN YELLOW FEVER.—Not many physicians would be disposed to regard the microscope of service in treating yellow fever, but Professor T. S. Bell, of Louisville, in an article upon the disease, which we

have copied in the present number of the MEDICAL NEWS, says that "every great evil in a case of yellow fever has its nidus in the liver and renal organs, and the discovery of this nidus is readily made by the use of the microscope." (See page 684.) But not in yellow fever only, but in treating almost any disease, the physician will obtain most important information with the microscope. If the clinical themometer is an important adjuvant in diagnosis and prognosis, much more so is the microscope with one who uses it.

AMERICAN ACADEMY OF MEDICINE.—This organization held its annual meeting this year at Easton, Pennsylvania, near Philadelphia, commencing September 17. Quite a number of distinguished gentlemen were in attendance, and quite an addition was made of new members. Under the head of "Proceedings of Societies," is published in this number of the Medical News, a brief sketch of the pro-

ceedings, especially prepared for us.

Last year we gave a short sketch of the objects of the American Academy of Medicine. One of the purposes is to bring into closer association medical colleges with other colleges of learning, and, therefore, it is required that the Fellows of it should have had conferred upon them the degree of A. M. in course, being graduates of literary institutions, "having received the degree of Bachelor of Arts, after a systematic course of study, preparatory and collegiate, extending through a period of not less than six years," or "who have pursued systematic courses of study in institutions which do not confer the degree of Bachelor of Arts, or have pursued irregular courses of preliminary study in other institutions, and consequently have not obtained this degree, but have nevertheless received, after the usual course of medical studies, the degree of Doctor of Medicine, and also the honorary degree of Master of Arts, and have made frequent contributions to medical science."

In this country medical colleges do not require on the part of their students any general literary or scientific education, and consequently the possession of the degree of M. D. is no evidence whatever of learning on the part of the holder. In fact, it is notorious that there are hundreds, if not thousands, in the medical profession who are not possessed of a common-school education. Under such

circumstances it is natural that an effort should be made to devise means which would give some assurance that with the possession of the degree of M. D. there was associated learning. An organized society, therefore, that requires on the part of its Fellows evidence, in the way of being possessors of collegiate degrees, of classical and scientific training, will not only bestow honorable distinction, but it will also "encourage young men to pursue regular courses of study in classical or scientific institutions before entering upon the study of medicine," by inciting in them an honorable ambition to qualify themselves to become members of such an organization; for its Fellowship will be evidence that with the degree of M. D. there is associated cultivation and superior acquirements, with high standing in the profession. Certainly no means could act so efficiently to insure a thorough preliminary education before commencing the study of medicine as such a society. It is nonsense to expect that the medical colleges of this country, among which there is such active competition, will ever set up a standard of requirements of a certain amount of literary and scientific qualifications before permitting students to matriculate. There is too sharp competition among the colleges, too many grossly ignorant men in the faculties, to expect any thing of the kind; too many whose papers read before State medical societies would disgrace a school-boy ten vears old.

So soon as the objects of the Academy are fully understood we have no doubt that all physicians who are able to meet its requirements will hasten to join it. By so doing the distinction which membership in it confers will the sooner be recognized, and those who contemplate the study of medicine will the sooner understand that there are requirements in order to occupy a high position in the profession which can only be met by the possession of a

collegiate education.

We are aware that many a stupid fellow, whose sluggish brain is almost at a stand-still, and who has scarcely mind enough to attend to his physical wants, has passed through college and obtained the degree of A. B., afterward followed by that of A. M. in course, while another, who has never seen a college, possessed with talents of the highest order, and filled with a love of knowledge, has greatly advanced science by his researches. But while

this is true, it is nevertheless a fact that with the masses there is so little difference in natural ability that cultivation makes all the difference there is. The master is superior to the servant in that he and his father before him have had training, education, while the latter and his progenitor has not. Among the masses of physicians, while here and there one shines conspicuously through his natural ability, all the others differ only as they differ in cultivation and mental acquirements.

Professional Vanity Sacrificing Life.—Under this heading the regular New York correspondent of the Cincinnati Gazette, who is regarded as very reliable in his statements, relates the following in regard to a surgical operation performed recently in a New York hospital. We think he has gotten things a little "mixed." We can not understand how that stopping to ligate a bleeding vessel would "destroy the symmetry of the operation." But if, in any manner, a surgeon would sacrifice a life to his vanity, he should be exposed. If the story has any foundation in fact we would like to be informed of the surgeon's name:

"There was a considerable attendance of doctors, surgeons and students at the blank hospital one day. Dr. —, a celebrated surgeon, was to amputate a boy's leg, and a brilliant operation was looked for. It was brilliant, but in the midst of it one of the spectators saw a spurt—spurt of blood that his practiced eye told him ought to be stopped at once. He looked anxiously at the operator, but though his eye saw it too, his pride was blind to it. To stop and bind it would spoil the symmetry of the performance. He went on, and finished to the admiration of the whole throng—'a splendid operation!'

"These are some of the darker shades of life in the great city. Here there is a vast extent of human suffering, for which there are no popular subscriptions, and instances like these, involving all the agony that can ever be found in death, pass unnoticed, and are swallowed up in the ocean where so many go down for ever."

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PRIGINAL CONTRIBUTIONS.

Malarious Diseases of Florida.

BY L. R. PEET.

So many people are now hungering for reliable information about Florida, the great sanitarium of the United States, according to the late Speaker of the House of Representatives, that a few paragraphs concerning a matter in regard to which all who are thinking of emigrating to the State in question are necessarily anxious inquirers, to wit, the diseases from miasma one has to have here,

may find some readers.

The soil, and what enterprising settlers are doing on the soil, seem to determine the frequency and continuance of these diseases; while the manner of living, the kind of food consumed, and the amount of exposure to the summer sun and the night air, determine the intensity of them. So far as the soil is concerned, the most complete exemption from sickness is found in the pine barrens. This is probably to be considered a somewhat unfortunate circumstance, for the barrenness of these sections (surely cursed, at a remote period, in a style that evidently was meant) can be realized only by ocular display. In the mundane economy simply remaining there was apparently deemed sufficient. To have added any diseases proper would have been cruelty to His creatures. In the middle class of pine lands, found in such abundance along the shores of the St. John's, malaria shows itself in a dilute form, generated chiefly in the so-called low hammock, which the river has gradually made by depositing its drift of muck. This strip of low hammock on the St.

John's and the inland lakes is quite narrow-from half-adozen to two hundred yards wide--and is covered with moss-laden live oaks and cypresses, also much rank vegetation, and is so wet, or in the season of heavy rains so liable to be flooded, that only frogs, snakes, alligators and their unlovely congeners reside there. A large amount of poisonous gas is produced in this natural laboratory, and is wafted over the adjacent country. Yet the strip is so narrow that the greatest solar diligence does not bring forth enough gas to create epidemics or endemics of a serious kind. In addition to the low hammock there are occasional patches of wet peat, one or two miles from the river shore, which increase the malarious supply, but not sufficiently to make a notable difference. In first quality pine lands, by some—especially the settlers on them considered the most fertile of the Peninsula, the conditions of malaria are permanently present. If only a small portion is cultivated, good health is the rule; but if considerable sections are cleared, plowed, hoed and otherwise stirred up, some of the ills to which flesh is heir rapidly increase. The same is true of high hammock.

A word in reference to the composition of the different soils may be in place here. If you spread a small pinch of the pine barrens earth on the palm of your hand and examine it with a pocket-lens of five or six diameters, the proportion of sand particles to those of muck will be found fifteen or twenty to one; second-class pine, a proportion of four or five to two; first-class pine, two of muck to one of sand. High hammock is like the last-mentioned pine. Low hammock is about three-fourths muck; peat beds, one grain of sand to forty or fifty of muck. Whether this muck (decayed vegetable matter) is the source of poisonous gas could be determined only by the chemist, and he has not done it yet, so far as I know. That the muck of most peat beds gives out such

gas seems quite certain.

In limestone regions diseases are similar to those in any limestone country. As I have had no experience of such I refer the reader to some one who has had. The purpose of this brief article is to give an outline idea of the way folks suffer from vital disturbances caused by miasmatic poisoning in the sections above mentioned.

First, chills. This disease closely resembles the ordinary ague, yet with differences. For instance, the chills

may be confined to any member-a finger, a toe, even to the first joint of a thumb or finger. It may affect one so slightly as to pass wholly unnoticed—the fever being the first indication. When the chill is thus slight the fever is greatly increased, and the closing swash of perspiration is lamentably copious and persistent. A big shake, of the kind with which the whole house seems to sympathize, is generally followed by a short fever, and a correspondingly brief third act. The epigastrium is often much affected, causing great distress. I had two chills, a day apart, in which the epigastrium was so prominently the seat of operations that I was for twelve hours in a state differing in appearance but little from cholera morbus. The suffering, as I shall always soberly remember, was very hard to bear, as no sin could be recalled to which it seemed to be a strictly suitable punishment. The subsequent sweating was memorable. The two which followed, and closed the course, were according to model. The weakening effect of our chills is very marked. A single, well-developed one, takes so much vitality out of the system that one goes on to the sick-list as to a place where he naturally belongs; and half a dozen of them fix him out for weeks.

Each victim has chills according to the way he, she or it is made. Some lie down and have them silently, as if taking a troubled nap after a heavy dinner; others are obliged to sit up. Some shake to a degree that would be pronounced caricature if histrionically presented; others have only a numbness and coldness in one thumb. One has epigastric effects which force him to gasp and groan as loudly as he can spare breath to do it with; another delivers homilies more amusing than edifying, or orations of vastly greater moment to the delirious orator than to anybody else, or becomes a kind of Gatlin gun, discharging poor jokes and puns, apparently having a very good time of it. Some have them every day-even two or three times a day-others every other day. On the eighth day, for three such intervals, after the series closes, there is liability of return.

During chills the bowels are often affected; and if the chills continue for some time dysentery or bloody-flux is apt to supervene. These are the only dangerous features. Chills alone never shake off this mortal coil, however they

may shake it up.

Quinine is, of course, the panacea. But I do think my fellow-creatures take too much of it at a time. In small (say one grain) doses, taken daily, lies the true potency of that most useful of remedies. In such doses the stomach is not irritated, and the full force of the drug is utilized. In large doses the stomach is so much disturbed that the desired effect is interfered with. Not unfrequently less definite hepatic trouble arises. The chills go on, yet during the "off-day" the fever continues, with more or less nausea and vomiting. Blue-mass and salts rectify this. Bilious attacks by themselves are rare.

To have an excellent chance to observe the character of Florida chills, and other forms of malarious poisoning, in one's own person, one should come here early in June, expose himself boldly to the midday sun two or three hours daily, sleep under a tree, and consume plump rations of indigenous bacon. He can thus have four months of quite unbroken observation. If the scientific spirit be not very active, so that observation of others suffices, let him come in the latter part of September, and during the following summer let him be careful to keep out of the meridian sunshine and the shower. He may live here for several years without being once stricken.

A cold is very rarely caught here, and it generally fails to get beyond a hoarseness and slight cough. The truly wonderful effect of the climate of Southern Florida on pulmonary consumption has been understated, even by florid reporters. Phthisis may have progressed to the stage of severe hemorrhages, yet cure seems, in a large majority of cases, to be certain. Unless the disease has reduced the patient to so low a state that exercise on foot or on horseback is impracticable, the process of decay is at once arrested, and vitality immediately begins to return. A few weeks ago I met a young man from Northern Mississippi, now in perfect health, who told me that when he came here, three years ago, he had had so many hemorrhages that he was too weak to walk more than a few yards without resting. By lengthening his walks day by he was able in three months easily to accomplish his eighteen miles without sitting down.

In conclusion, I would like to call attention to the fact that in the soils already alluded to there is, except in wet peat bogs, no stagnant water. There are innumerable pools—sink-holes, as they are called—but owing to their connection with under-currents, they are quite free of animal life. Are we to consider this as helping to account for the comparative light character of our bilious attacks? YALAHA, FLORIDA, August 24, 1878.

Case of Ovarian Tumor.

BY DR. W. B. ERDMAN.

MRS. W. H. LAROSE, aged 44 years, married, and mother of two children. General appearance: complexion sallow; emaciation considerable; habits of life regular. Surface of body: temperature 95° in axilla; perspiration; skin moist and natural. On August 20, 1876, the abdomen measured, at umbilical level, 41 inches; from ensiform cartilage to umbilicus, 11 inches; from umbilicus to symphysis pubis, 101 inches; from right anterior superior spine of ileum to umbilicus, 121 inches; from left anterior superior spine of ileum to umbilicus, 124 inches. There was slight mobility of tumor; no evidence of adhesion; no crepitus; distinct fluctuation over the entire abdomen. There was tenderness about four inches or more below ensiform cartilage on left side. The sound on percussion was dull over entire abdomen, except space of about an inch from sternum and ribs of right side, which was tympanitic. The lumbar sound on percussion was tympanic on right, and dull on left side. The pressure interferes with digestion and respiration.

The uterus was situated low down in the pelvis, retroverted; its mobility normal laterally; none upward or downward. The length of the cavity was $2\frac{1}{2}$ inches, measured by sound; the os and cervix were normal; the vagina was normal, as also the temperature of the same. The catamenia were absent. December, 1875, menstruated every eight to fourteen days until date of cessation, May 1, 1876. The urine was straw colored; of normal odor; acid reaction. The quantity in twenty-four hours was about one quart. She drinks very little. The tongue was in a normal condition; the appetite good; no thirst; considerable flatulence; the action of the bowels was

regular.

The breathing was thirty a minute; there was no cough; the physical signs were normal. She rests best on the left

side. The pulse was 100 a minute; the sounds of the heart were normal.

Her history was as follows: There were no apparent hereditary influences; her father lived to be about seventy years old; her mother to about sixty years, and died of heart disease and dropsy. She lost a brother by heart disease; the remaining five brothers and sisters are healthy. She can not recall any blood relatives similarly afflicted. The first sign of ill-health was in December, 1875; she thought herself pregnant. There were pain and tenderness, about four inches or more square, below ensiform cartilage, toward left side; none in the groin or pelvic region. There was at times considerable bearing down of the uterus. There was nausea five months ago; she vomited always in the evening. The symptoms worse periodically. The increase in size was the same as if she was pregnant. She imagined herself pregnant up to the time when she summoned her family physician, Dr. W. B. Erdman, on account of severe paroxysmal pains, expecting to be confined on July 26, 1876, when he found her not to be pregnant.

An ovarian cyst was diagnosed, and tapping was advised

in order to arrive at a more satisfactory diagnosis.

August 20, 1876. There was removed by tapping twenty-two pounds of thick, alkaline, greenish fluid, of the consistence of syrup or thick gum-water, thereby much improving the comfort of the patient, so far as reparation and pressure were concerned. Three and a half

hours after tapping, pulse 102; temperature 99°.

After tapping, tumor revealed itself very distinctly, and was located between the left lumbar and left hypochondriac region, extending over to the umbilicus. It was not a "unilocular cyst." To have made out a satisfactory diagnosis before tapping, when the adbomen was already so greatly distended, was in her case difficult. If a case is not seen in the early stage of disorder, and the abdomen has already become enlarged, and is tense from the vastness of the fluid collection within the "cyst," it will require experts to make out a satisfactory diagnosis at first sight. The hardness and resistance of the abdomen will not admit of the fingers indenting the abdomen sufficiently to make out the existence, much less the size, and form, of the more solid mass of an altered ovary. In such cases it is not until the woman is tapped, that the relaxation of

the abdominal walls will permit the pulps of the fingers to estimate the existence, size, and form of the solid mass of such tumors. The result of our tapping, as before said, revealed a tumor of considerable size, situated high up in the left side of her abdomen.

In comparing the normal location of the ovary we might question: Is this an ovarian tumor, the location being so high? Might not the tumor be of some other origin and connected with some other organ of the abdominal viscera?

If the patient could have given definite answer, whether the origin of the tumor had been low down in the left side of her abdomen, and gradually assumed the higher location, it would have materially aided us in arriving at a more, or rather at once at a correct diagnosis. The patient having considered herself pregnant, consequently she expected an increase in the size of her abdomen, and was unable at the time of consultation to inform us at what particular part of her abdomen the enlargement commenced. It was not until some time after being tapped, when it occurred to her memory that the enlargement did commence low down on the left side of her person; her feelings differing much from those during her former pregnancy. In consultation subsequently we concluded to "tap" her, as her abdomen was so much distended that no appreciation of the tumor could be had without it.

Notwithstanding the high location of the tumor found after tapping, we felt convinced of its being "ovarian" from the nature of the fluid withdrawn, and, before tapping, from the rotundity of the abdomen, and her supine position, and without a change of the line of dullness on change of position. Whereas, in "ascites" in the supine position, the fluid gravitates on the side of the abdomen, and the line of dullness greatly alters on change of position. Shortly after she was tapped, her abdomen again commenced to enlarge with great rapidity, when we were again called for council. The chances of recovery without a radical operation were properly presented to herself and family. After due deliberation the patient decided to have the tumor removed, and intrusted herself entirely to the care of Dr. P. B. Breinig and myself. From this time on we jointly assumed the responsibility of the case.

She being anæmic and very much emaciated and debilitated in consequence of the long drainage on her system,

from the rapid growth of the tumor, her bowels costive, urine scanty and high colored, appetite poor, glandular secretions deficient, consequently no definite time was named for the operation. She was ordered R. Tinc. ferri. chlori. gtt. x; liq. ammon. acetat. f3ij, every three hours during the day; an anodyne at night when indicated, with occasionally mass hydrarg, grs. ij at night, followed in the morning by castor oil. The diet was to be concentrated and nutritious; mind composed as much as possible, allowing no imprudent visitors to her house. The patient's general system soon rapidly improved to a marked degree. The expectation of the operation bringing permanent relief instead of palliative, as in the operation for tapping, coupled with encouragement from visiting friends, and her entire trust in God, caused her mind, before depressed and desponded, to become more encouraged and hopeful. As soon as the patient's system was brought to that condition that no further impression could be expected from medication, the day for the operation was appointed.

I made an incision in the medium line of the linea alba down to within two and a half inches of the symphysis, extending the incision upward from this point five inches. Through the opening in the abdominal walls and peritoneum, the glistening cyst revealed itself, when with a steel sound the adhesions were freed from the anterior and lateral walls of the abdomen as far as was possible. At this step of the operation the cyst was tapped with a Fitch's, trocar made for the purpose by Mr. J. H. Gemrig, with a rubber-tube attached to convey the fluid through it to a suitable receptacle. It was now discovered that

we had to deal with a "multilocular cyst."

We attempted to withdraw the sac and the solid mass of the tumor, composed of a number of smaller cysts, of various sizes, containing a very thick gelatinous substance, which could not be tapped. The adhesions posteriorly and laterally being too great, and the opening through the abdominal walls too small, the tumor in consequence could not be removed. The opening through the abdominal wall was enlarged to seven and a half inches, and the adhesions freed from the lower surface of the liver and stomach, and part of the omentum and intestines, when the tumor was brought out, showing a pedicle, which was about two inches long, thick, and broad.

The right ovary was found to be infiltrated, and was in-

cised, and its contents were squeezed out. The "Atlee" clamp was now adjusted to the pedicle, and the tumor detached, which weighed ten pounds, and the contents of

the cyst forty pounds.

The hemorrhage was considerable, resulting more particularly from the very firm adhesions to the under surface of the liver, but was stopped by the liberal use of the liquor ferri subsulph. The abdominal cavity was thoroughly cleansed, and a thorough application made (of the above solution) to the stump.

The walls of the abdomen were brought together by the deep silver wire interrupted suture, including the peritoneum. The wound was more closely approximated by the application of hare-lip pins, placed midway be-

tween each deep suture.

Particular care was taken to bring the lips of the wound accurately around the pedicle, so that the peritoneal cavity was perfectly closed. Thus pus and other secretions from the sloughing stump of the pedicle were prevented from entering the peritoneal cavity. Adhesive strips were applied to give further support to the sutures, and the wound was dressed with a pledget of lint dipped in carbolized oil. The relaxed abdominal wall was supported by a roll of cotton-wool placed upon it, and over which an elastic flannel binder was pinned, and the patient put to bed.

Hot bricks and bottles filled with hot water were applied to different parts of the body. Reaction set in at 12 o'clock midnight, when she complained of heat. The bricks and bottles were removed, and, at one o'clock A. M., spt. æth. nitr. gtt. xxv was given, and the same dose repeated at two o'clock. She rested quite comfortably the remainder of the night, without pain, with intervals of an hour to an hour and a half of sleep, without the need of an anodyne.

On the tenth day after the operation the hare-lip pins were all removed, and three of the sutures, leaving one suture just above and one just below the pedicle. The wound had united completely up to the pedicle by first intention. The pins and sutures were not removed sooner because they had not caused any irritation to the parts.

From the fifteenth day (Nov. 8) to the thirty eighth day (Dec. 1) she passed through several severe and very critical periods. The bowels so long subject to the great pres-

sure in consequence of the tumor and contents, then again kept in splints, as it were, since the operation two weeks previous, had resulted in a loss of nerve action and muscular contractility.

Cathartic medicines and injections failed to produce their effect unless the dose was frequently repeated, and, when they finally acted, they could scarcely be controlled—obstinate constipation again followed. This state of affairs lasted for days, when symptoms of a typhoid nature supervened—such as rigors, epistaxis, harassing diarrhæa, of thin yellowish colored stools, weak and frequent pulse, with great nervous prostration—accompanied with other signs indicative of "septicæmia."

These symptoms subsided under appropriate treatment. During this time a small circumscribed swelling made its appearance on the linea alba near the umbilicus, which in a few days was lanced, and discharged about an ounce of pus. The discharge gradually became less, and in about two weeks all was healed. She then took a cold, which settled on her lungs, followed by pleuritic pains in her right side, extending back to the spine, accompanied with a severe cough, bronchial rales, and copious expectoration; bed-sores to some extent unavoidably occurred from her long confinement, proving an additional source of irritation to her already much exhausted system; but, notwithstanding all these depressing influences, she slowly commenced to convalesce. The treatment varied according to the indications. A description here in detail would occupy too much time, and would prove monotonous. The thermometrical observations are recorded for a period of sixty days. In referring to it, it was found that the fluctuation of temperature varied less than might be supposed from the circumstances of the case. In conclusion, I will say that I believe the patient could not have survived but for the vigilant care and support given, morally and medically. With the blessing of God she still lives, and is now slowly but surely recovering.

Medical Faith.

BY PERCIVAL HERMANN, M. D.

By "medical faith" we mean the confidence which a patient reposes in his attendant, or in any particular cure or remedy. The influence of the mind over the body in health or disease is apparent, at least to a limited extent, to the casual observer even. Many people are sick only because they imagine themselves so. Instances are not rare where persons succumbed to the most trivial affections for no other reason than that they lost all hope and courage from the beginning; and, short of miraculous, recoveries have taken place entirely through the hopeful and buoy-

ant spirits of the patient,

Different from the medical ignoramus the intelligent practitioner, as a rule, depends more upon the strength of constitution and recuperative powers of nature that remain in the system than upon drugs to restore normal function and structure in a diseased organism. The former requisite to effect a cure is of such paramount importance that the latter alone is of no avail whatever, notwithstanding that it should be ordered and prescribed by the most skillful and experienced professor of the medical art.

It is utterly impossible that persons with dejected and unsatisfied minds can enjoy health for any length of time; and when one is sick more than ever does it become necessary that all gloom, fear and hopelessness should continually be kept at bay from the patient's mind, so that nature will have an opportunity to rally the body back again into a state of soundness—to retake the citadel of health.

Disease weakens and impairs reason and judgment as well as all other vital processes; and it is a fact known by not a few that a person laboring with a disease is remarkably credulous concerning the ultimate issue of his hopes and fears. Any person who, by promise, by reputation, or by any convincing act whatever, will insure him restoration of health, gains his confidence. In other words, the patient has faith. A popular remedy, even if it is a "quack production," or a lauded "incantator's trick," can also with those easily duped secure this element of successful practice. Quacks, charlatans, patent medicines, and charms cure—when they do cure—by this virtue many times oftener than by any other.

The body is constantly subjected to the elevating or to the depressing influence—as the case may be—of the mind. There is no intermittency in the agreement between one and the other. As the mind is, so is the body, generally; therefore, in attending the sick we should minister unto the mind first—get that "medical faith," so
essential—and make the administration of our remedies
of secondary importance; for it is pre-eminently the hope,
the trust and the confidence of the patient that effect
the cure. Yes, this "medical faith" is a matter of prime
importance in a number of affections; for where you can
not command it you need not expect to signally succeed,
and you would better recommend the employment of
some other doctor. I could write volumes of instances of
marvelous cures effected by the imaginative powers
alone—sometimes coupled with a seeming co-operative
influence of some agent—but illustrations of this kind are
not necessary for observing medical men.

The physician, then, who wishes to practice with the greatest chance of success possible must keep in view the influence that the mind exerts over the body; that nature cures rather than physic; that gloom and distrust are incompatible with the prospective renewal of health in the patient; that an afflicted person is extremely credulous about the object of his hopes and fears; that we can best affect the body through the mind, and that he must command in his patient trust, confidence—"medical

faith."

How can we control this very important point, it may be queried? We answer, by natural endowments and by acquired proclivities alike. Foremost of all a man should have a natural aptitude for the profession; then he is fitted to undergo all the self-denials, condescensions, and vexatious dealings never unconnected with the practice of physic, with seeming pleasure and ease, which is a prime essential. Whoever can not suffer these burdens without showing a reluctance or unwillingness therefor seldom succeeds. One that is short, snappish, and acrimonious, who depends upon the patronage of the people, lacks a great element necessary to getting along desirably. He who does not strive to please, to command honor and respect, as well as to gain confidence, it matters not what his trade or profession is, can not prosper.

Personal appearance, personal magnetism, that strange and mysterious, yet powerful influence so-called, manners and habits, will militate or countenance success very largely in an exact proportion as they occur in kind and degree. Is not a fine and commanding appearance winsome and admirable, when contrasted with one slovenly and uncouth? Attention and care of person must never be neglected. There can certainly be nothing so revolting to the sense of good taste of a patient than to be under the care and treatment of a medical man who is indifferent and unconcerned as regards his personal cleanliness and attire. Lasting opinions of persons are very often formed at first sight, never to be effaced by any modifying influences whatever. Personal magnetism does not admit of much cultivation, since it is an inborn natural gift or faculty. Some men are born to lead and persuade—to influence and govern others. Again, others are so unbearable and hateful, without any particular cause definable, that their presence irritates; their counsel, even if wise, provokes, and that their jokes even turn into insults.

Manners and habits individualize us more completely than all other peculiar properties combined. A man is generally known and socially empowered by his personal manners and customs. "A man's manners make his fortune." By them we command the admiration, respect, and good wishes of our fellows to a large extent. Little things in the manner of meeting or passing persons, of conversing with them, of walking, of dressing, of the general deportment, if distasteful or offensive, will cost -or perhaps even occasion him to fail altogether-the physician more than any other shortcoming, with skill and ability not excepted. Tastes differ, and hence we must study to please. We must endeavor to understand human nature for our own welfare as regards acquiring a fit competency as practitioners of medicine, as well as we should bear in mind the influence of temperaments and idiosyncrasies of our patients when we administer remedies for their relief.

Restriction and Prevention of Diphtheria,

Cautions and Suggestions by the Michigan State Board of Health.

COMPILED BY HOMER O. HITCHCOCK, M. D.

Because Diphtheria has been and may be expected again to be widely prevalent, and is a formidable and fatal disease, and because it is believed to be a disease very

largely preventable, the State Board of Health, of Michigan, desires to disseminate as widely as possible among the people of this State, the knowledge of certain facts and principles which seem to be well established, as to the nature and causes of the disease, and the rational means for its restriction and prevention.

NATURE OF THE DISEASE.

Diphtheria is, primarily or secondarily, a constitutional, or blood-poisoning disease. It attackes persons of all classes and ages, but most frequently children under sixteen years of age.

In ordinary cases the poisonous principle of Diphtheria probably enters the blood by way of the mouth and the air passages.

The period of incubation of Diphtheria, or the time from a person's exposure to the disease to his coming down with it, varies somewhat—being usually from a few hours to seven or eight days; in some cases, it is twelve or fourteen days.

Its most frequent local manifestations are in the mouth, throat, and air passages. When in the mouth or upper part of the throat only, the disease is, as a rule, less dangerous and fatal, but none the less contagious, than when in the air passages, below the fauces.

The specific contagium developed by the disease itself, and by which it spreads, is diffused by the exhalations (breath, perspiration, etc.) of the patient, through the air immediately surrounding him, as well as by clothing or other solid substances that have been brought into contact with the products of the disease.

As a rule, the virulence or malignancy of the contagium is in direct proportion to the severity of the case from which it emanates, though malignant cases may result from exposure to a mild case.

The more this contagium is allowed to accumulate in the room where the patient lies, the more powerful does it become.

RESTRICTION OF DIPHTHERIA.

Diphtheria is a contagious disease, and hence the strict observance of the following precautions is of very great importance:

1. Every person known to be sick with this disease should be promptly and effectually isolated from the pub-

lic-one or two persons only should take the entire charge of the patient, and they should be restricted in their in-

tercourse with other persons.

2. The room into which one sick with Diphtheria is placed should previously be cleared of all needless clothing, carpets, drapery, and other materials likely to harbor the poison of the disease. This room should constantly receive a liberal supply of fresh air, without currents or drafts directly upon the patient. It will be well also to have the sun shine directly into the room.

3. In order that the guardians of the public health may have early warning, it is important that every case of Diphtheria be promptly reported to the local board of

4. The duties of householders, physicians, and boards of health, as specified in sections 1,734, 1,735, 1,732, and 1,695 of the Compiled Laws of Michigan, 1871, should be rigidly enforced. These duties are as follows:

"(1,734.) Sec. 43. Whenever any householder shall know that any person within his family is taken sick with the small-pox, or any other disease dangerous to the public health, he shall immediately give notice thereof to the · Board of Health, or to the health officer of the township [city or village] in which he resides; and if he shall refuse or neglect to give such notice, he

shall forfeit a sum not exceeding one hur dred dollars"

"(1,735.) SEC. 44. Whenever any physician shall know that any person whom he is called to visit is infected with the small-rox, or any other disease dangerous to the public health, such physician shall immediately give notice thereof to the Board of Health or health officer of the township [city or village in which such diseased person may be; and every physician who shall refuse or neglect to give such notice, shall forfeit, for each offense, a sum not less than fifty nor more than one hundred dollars."

"(1,732.) Sec. 41. When the small-pox, or any other disease dangerous to the public health, is found to exist in any township, the board of health shall use all possible care to prevent the spreading of the infection, and to give public notice of infected places to travelers, by such means as in their judg-

ment shall be most be most effectual for the common safety."

"(1,695.) SEC 4. The said board shall also make such regulations as they may deem necessary for the public health and safety, respecting any articles which are capable of containing or conveying any infection or contagion or of creating any sickness, when such articles shall be brought into or conveyed from their township, or into or from any vessel; and if any person shall violate any such regulation he shall forfeit a sum not exceeding one hundred dollars."

The general laws of this State provide that the mayor and aldermen of cities and the president and council or trustees of villages "shall have and exercise all the powers, and perform all the duties of a board of health as provided in this chapter." This is in chapter 46, sec. (1,740) 49, Compiled Laws of 1871, from which chapter all the foregoing sections are taken. See also, in Laws of Michigan, 1873, the general act for the incorporation of cities, chapter 14, sections 1, 7, and 8.

It therefore appears that, except possibly some special charter may exempt

a city or village, the foregoing provisions of law are probably applicable and in force in the cities and villages, as well as in all the townships, throughout the State.

5. The discharges from the throat, nose, and mouth are extremely liable to communicate the disease, and should be received on soft rags or pieces of cloth which should

be immediately burned.

6. The discharges from the kidneys and bowels are also dangerous, and should be passed on old cloths and burned, or into vessels kept thoroughly disinfected by nitrate of lead, chloride of zinc, or sulphate of iron (copperas), and then be buried at least one hundred feet distant from any well.

Copperas, dissolved in as little hot water as will dissolve it, is a good disinfectant for this purpose.

7. Nurses and attendants should be required to keep themselves and their patient as clean as possible—their own hands should frequently be washed and disinfected by chlorinated soda.

8. Soiled bed and body linen should at once be placed in boiling water or in water containing chlorinated soda,

chlorinated lime, or solution of chloride of zinc.

9. All persons recovering from Diphtheria should be considered dangerous, and therefore no such person should be permitted to associate with others or to attend school, church, or any public assembly, until in the judgment of a careful and intelligent physician he can do so without endangering others.

20. The body of a person who has died of Diphtheria should, as early as practicable, be placed in the coffin, with disinfectants, and the coffin should then be tightly closed. Afterward, the body should not be exposed to view ex-

cept through glass.

11. No public funeral should be held at a house in which there is a case of Diphtheria; nor in which a death from Diphtheria has recently occurred. No children at least, and it would be better in most cases that few adults,

should attend such a funeral.

12. The room in which there has been a case of Diphtheria, whether fatal or not, should, with all its contents, be thoroughly disinfected by exposure for several hours to strong fumes of chlorine gas, or of burning sulphur, and then, if possible, it should for several days be exposed to currents of fresh air.

To disinfect an ordinary room with chlorine gas: having tightly closed all the openings of the room, place in it an open earthen dish containing four ounces of peroxide of manganese. Pour on this one pound of strong muriatic acid, being careful not to breathe the fumes. When certain that continuous evolution of chlorine is taking place, leave the room and close the door.

To generate sulphurous acid gas, put live coals on top of ashes in a metallic pan, and place on the coals sulphur

in powder or fragments.

A convenient way is to place the coals and sulphur on a heated stove plate or cover turned bottom upward in a pan half filled with ashes. To disinfect one hundred cubic feet of air requires the thorough burning of about one and one-half ounces of sulphur.

13. After a death or recovery from Diphtheria, the clothing, bedding, carpets, mats, and other cloths which have been exposed to the contagium of the disease, should either be burned, exposed to superheated steam, to a degree of dry heat equal to 240° F., or be thoroughly boiled.

The foregoing methods of disinfection are applicable in

all contagious diseases.

PREVENTIVE MEASURES.

14. Avoid the special contagium of the disease.

15. Beware of crowded assemblies in ill-ventilated rooms.

All influences which depress the vital powers, and vitiate the fluids of the body, tend to promote the development and spread of this disease. Among these influences, perhaps the most common and powerful, are impure air and impure water. Because of this, and as a means of lessening the danger of contracting almost all other diseases, the following precautions should always be taken, but more particularly during the prevalence of any such disease as this.

16. The grounds under and around the house should be well drained.

17. No vegetable or animal matter should be allowed to decompose on the surface of the ground near the house.

18. If any soap-factory, slaughter house, rendering establishment, or other source of foul odors, contaminate the air which you and your children daily breathe, take immediate measures through your local board of health or health officer to have such nuisance abated.

18. Your own privy, especially, should at all times be thoroughly disinfected, by dry earth, coal ashes, or copperas-water; and the receptacle should be so constructed

as to be water-tight and to be tightly covered when removed to be emptied, as it should be often enough to prevent the air about it from becoming offensive, and in cold weather so far as possible.

20. Your whole house, and especially its sleeping rooms,

should be well ventilated.

21. Your cellar should be dry and well ventilated; it should frequently be whitewashed, and always kept clear

of decomposing vegetable or other substances.

22. No cesspool should be allowed near the house. If there be one, it should either be removed or be thoroughly and frequently disinfected with sulphate of iron (copperas).

23. Your house drains should be looked to with scrupulous care, to see that they are well trapped, kept clear,

and ventilated into the open air.

24. Your house should not have uninterrupted connection with a sewer. Be sure that the waste-pipes do not permit the entrance of sewer gas into the house, but that they enter the sewer through an open-air space, or at least through a space freely ventilated to the open air.

25. Be sure that your drinking-water is not contaminated by surface drainage, nor by leakage from the drain,

gas-pipes, sewer, cesspool, or vault.

Proceedings of the International Congress of Hygiene,

Translated for the "Medical News" by R. B. Davy, M. D., Cincinnati, Ohio.

The cause of infant mortality was the subject of a large number of papers. Dr. Roth, of London, divided them into four classes.

The first comprised the inherited taints; such as tuber-

cular, scrofulous, syphilitic, cancerous, etc.

The second, the unfavorable conditions in which they were placed; as, insufficient air and light, crowding of families into small rooms, infant asylums, the so-called hotels for infants, and neighborhoods of water-closets, outlets of sewers, etc.

The third constituted the alimentation of the child;

either of poor quality or insufficient in quantity.

The fourth class enumerated the causes derived from

the indifference or neglect of the mothers and nurses,

want of care, bad treatment, etc.

Dr. Meyer condemned the disuse into which nourishment by the mother has fallen, especially in France. Where mothers nurse their children, infant mortality is a great deal less than in those countries where it is hired or done artificially.

Researches made in Scotland, Italy, Holland, England, the United States, and in different parts of France, have furnished in this regard the most convincing results.

How is it, then, that in France the wife does not nurse her child? The causes are numerous, and vary with the different classes of population. Among the rich and idle it is coquetry, worldly habits, aversion to fatigue of all kinds, no matter how trifling, which cause the wife to confide her infant to a breast which is paid for. In the middle class the wife almost always shares the work of her husband in his business or avocation, and, consequently, has no time to nurse or look after her child. She thinks of nothing before work, but oftener she has no time. In the low classes the wife is employed at the factory or workshop just the same as the husband; and, since places of this kind are not furnished with an apartment where the mothers at fixed hours can nurse their children, it is plain to see that maternal nursing is impossible. There is yet the girl-mother, who, less than all others, is capable of nursing her child. The misery and despair to which she is often reduced are quite sufficient to prevent her. She does not nurse her child, because she is not well nourished herself.

Is there a way to remedy this condition of things? Certainly. Among the rich it is necessary to make mothers understand that they are neglecting one of their most important duties when they fail to perform the trifling task of nursing their own children. The women of the middle class are to be convinced that the care of their offspring is of as much importance as the business or trade of their husband. It is a good thing to make money, but it is not to be done at the expense of these little beings, who will some day represent the strength of the country. It is in the lower classes where the principal difficulty is found, because there almost insurmountable obstacles are encountered; for it is necessary that the woman devote

herself entirely to her child during the first few weeks of its existence.

Such are the objects of the National Society of the Friends of Infancy, founded by M. Meyer and a number of other persons devoted to the cause. They have already rendered considerable service, and it depends upon all those who are interested in these serious and painful problems whether the work already commenced shall be continued.

Dr. Drysdale, of London, has discovered a remedy of admirable simplicity against the excessive mortality of newly-born infants. Being President of the Malthusian Society, of London, he interests himself in everything which concerns population. The questions of marriage and prostitution are his favorite subjects.

It is useless to say that he is for free prostitution.

Against the mortality of newly-born infants he offers this remedy taken from Malthus: "Let fewer children be made." People continue to procreate without asking themselves the question whether the conditions in which they are placed will enable them to raise all the little ones they have brought into the world. This is more than a misfortune—it is a crime. No child should be brought into the world if a place for its reception has not been first prepared; if the means for its existence have not been insured. All other means of prevention of infant mortality will be vain so long as the only effectual one is ignored. The misery will be removed and the consequent infant mortality diminished only as this method is adopted.

These are the general ideas held by M. Drysdale. Through his peculiar and paradoxical manner we must recognize that which is true and based on thought. Yes, effectively, would it be necessary not to make more children than can be taken care of; but here simply rests the difficulty. How is such a thing to be prevented? Can we believe that the simple fear of greatly increasing their offspring can make people chaste? Indeed, this would be figuring greatly on the actual morality of the men; and M. Drysdale appears to be on this point an absolute

skeptic.

Among the most interesting speakers of this first session we will mention yet MM. Gibert and Conderau. Dr. Gibert, of Havre, rehearsed what had taken place in his

city, where the mortality of infants which, in 1870, was forty-two per cent, has now fallen to twenty-two per cent. Two methods have been adopted: the first consists in efficiently aiding all poor mothers who consent to nurse their children; the second is to strictly care for the child who falls sick, not only in giving advice, which very often is not followed, but in carrying out the treatment one's self. M. Gibert has founded a dispensary for indigent children at Havre, where during last year 1,113 of these little patients were treated. Medicines, baths, douches, everything was administered to them on the spotand gratuitously, and a kitchen attached to the dispensary furnished the necessary food to those who had not sufficient nourishment at home. The results obtained were grand.

Dr. Condereau, after studying the subject of artificial

alimentation, gives the following conclusions:

It is necessary to study it from another point of view than that of statistics. We must consider the physiological and chemical conditions of the child's digestion in the different stages of its development. Clinical observations are not sufficient to elucidate the problem; as with all physiological problems, it is necessary to have recourse to experimentation. The physiological and chemical study should embrace:

1st. The histological and anatomical examination of the glands of the new-born child, and the different phases of

their development.

2d. The study of the digestive ferments, the order in which they appear, and their properties according to the age.

3d. The chemical study of the ingesta and excreta.

The histological study of the glands and ferments, and

experiments, can only be made on young animals.

If an examination, at different times, is made of what becomes of cow's milk in the stomach of a puppy, notable differences in the action of the digestive fluids will be found. If several pups of the same brood are examined in this way the stomach will be found to have acted differently upon the milk.

We may conclude then i noundly to villasup oil a

1st. That the digestive glands act differently at different periods dating from birth.

2d. That different kinds of milk are not acted on in the

same manner by the same digestive fluids.

It may be admitted from the present time as a very probable hypothesis that in different kinds of animals the identical digestive phenomena show themselves at very different periods.

1st. The function is identical in all when the organic

development is identical.

2d. The rapidity of development differs according to

species.

3d. The greater or less rapidity of development is the cause of the difference in digestive activity in animals of different species at a period equally removed from birth.

4th. This development is not always equally rapid in all

individuals of the same species,

In order to be able to compare the experiments on different kinds of animals it would be well to admit independently of the age, properly speaking, a functional age, characterized by an identical state of organic development, which could be called the physiological equivalent.

With regard to food, clinical facts have shown that the milk of the mother is that best suited to the organs of the young child. Cow's milk is generally used for artificial nursing, but it often occasions disorders in digestion, and, in consequence, inanition. Examinations of the excreta show that the casein is not digested, and often undergoes, in the intestine, putrid decomposition.

The simultaneous and constant occurrence of these two observations makes us look upon one as the cause of the

other.

Many observers have thought to remedy this fault by adding to cow's milk a little water and sugar, so as to reduce the proportion of casein, which acts as a premature element.

Agotized matter exists in milk-

1st. In the form of albumen, which is perfectly absorbable in the stomach without precipitation.

2d. As casein, which is coagulated by the gastric juice,

and totally rejected in the fæces.

Direct experiments show that the coagulation of casein is less rapid and the coagulum less compact in proportion as the quantity of albumen is greater.

Chemical analysis demonstrates that in human milk the albumen is to the casein as 100 is to 22.73, while in cow's

milk it is as 100 is to 239.20.

These figures are sufficient to explain the difference observed in the digestion of the two kinds of milk.

Dilution of cow's milk even one-half does not remedy the difficulty; for it still contains 6.2 grammes more of casein to the liter than human milk, and 15.72 grammes less of albumen. It is at once then an improper food by the excess of casein and insufficient amount of albumen.

A special study of the form in which agotized matter

exists in the urine teaches us-

1st. That there are two categories of milk, one in which albumen and the other in which casein predominates.

2d. In the first are found the milk of the woman, mare, ass (all the solipeds), bitch, and probably all the carnivora.

3d. In the second are found that of the cow, goat, yew,

and all the ruminants.

4th. It is exclusively the milk which has a predominance of albumen that suits the wants of the new-born child.

5th. The best mode of preparing cow's milk for the child is to mix one-fourth of a liter of milk with three-fourths of a liter of water containing three fresh eggs, and then sweetened.

This would have chemically the composition of human milk. The egg as a food for the infant has already been tried, and as such recommended by Bouchardat, Gubler, and Jolly, of Toulouse. I have used it myself with advantage.—La Tribune Medicale, Aug. 25, 1878.

Chronic Croupous Bronchitis.

Dr. Glasgow: I understand that some weeks ago, Dr. P. G. Robinson presented to this Society a specimen derived from a very rare disease, namely, chronic croupous bronchitis. It has been my good fortune to procure from a friend a similar specimen with a history of the trouble. This specimen, which I now exhibit, was considered at the late meeting of the American Medical Association [in Buffalo as one of the finest ever seen in this country.

The young man is seventeen years of age, pale, and somewhat emaciated. He has suffered from time to time during the past eighteen months, with great dyspnœa, relieved by the occasional coughing up of these casts. About a year ago he suffered intensely with a peculiar feeling of confusion in the head; he was very nervous,

and felt as if he could not remain quiet within doors, and would go out and run a long distance. During this period he expectorated two large casts, and thereupon apparently recovered his self-possession. These symptoms, to my mind, were evidently due to defective aeration of the blood. In March last he expectorated two smaller casts, and has been more or less under the weather since, until about three weeks ago, when he had a severe chill. This was followed by fever and several violent paroxysms of coughing. In the first paroxysm he brought up one of the casts which I have shown. In the second paroxysm the other. The fever then subsided and he has had no return of it since. There is now no dyspnæa, and he considers himself well.

Primary chronic croup is generally accompanied by hemorrhage; but in this case there has been no hemorrhage. I have never seen the patient but once, and, therefore, can not give the details of treatment. On examination, nothing was to be seen in the larvnx or in the trachea, though I was able to get a clear view of this tube to about one-half of its length. There was suppressed respiration in the lower lobes of both lungs, near the angle of the scapula; on the right side a few notes could be heard. There was no dullness, in fact, very little that could be called abnormal, except the suppressed breathing over the lower lobes. The specimens were photographed on the same day that I received them, but they are now somewhat softened. A point in this case seems to confirm certain statements regarding change of climate in this affection. The patient is a farmer's son; when in the country he is comparatively well, but as soon as he comes to town he begins to suffer. The standard treatment is with iodide of potassium in conjunction with inhalations of lime-water by the atomizer. I should lile to hear the results of treatment from any one who has had practical experience in this disease,

Dr. Engelmann: I have had occasion lately to look into the literature of this subject, and, as the Doctor remarks, the cases are rare. As far as I have been able to determine, the treatment also has been exceedingly unsatis-

factory in most cases.

I have seen a case in which one of the larger bronchi of the right lung was affected, or possibly all of them. The case was examined quite thoroughly; of course, percussion revealed nothing, but ausculation showed a decided impairment of the respiratory murmur below a certain point on the right side. After expectoration of the casts the passages apparently became free, but were very soon closed again. The case was one of secondary croupous bronchitis, distinctly localized, occurring in a patient affected with cancer of the ovary, who was failing rapidly. About three weeks before the death she began to expectorate very perfect casts three to four inches long. main branch was so occluded that it would barely admit a lead-pencil; perfect casts of it were expectorated more than three or four times. I suppose the smallest bronchi were about the size of half the thickness of a lead-pencil. We tried expectorants, but as the patient was rapidly failing from the cancer of the ovary no formal treatment was instituted for the bronchial trouble.

Dr. Prewitt asks in what sense the affection could be designated as secondary. I may have used the expression somewhat unadvisedly, but the leading feature in the case was the cancerous cachexy. Whether the bronchial disease was secondary to this, or simply accidental, I can not say. The patient, however, expectorated these casts constantly, several dozen altogether, I suppose. There was no hemorrhage during the progress of the affection from

the air-passages.

Dr. Wm. Porter: The specimen just presented is one of the most interesting of its kind that has been preserved. There is no doubt that many casts are lost, as they are often expectorated in small pieces-coming away during emesis perhaps—and there has not been much literature to direct the attention of physicians to the subject. Among the cases recently noticed is one presented by Dr. Beverly Robinson to the New York Pathological Society, and the one reported by Dr. P. G. Robinson in our own Society last week. Most of the few casts I have seen were of a larger caliber than this one, but none of them entered so minutely into the smaller bronchial tubes. The exudation is doubtless of a croupous nature, and when examined under the microscope is seen to be laminated, containing very little debris and few epithelial cells. In making an autopsy some years ago I accidentally found a membranous cast about the diameter of a small lead-pencil, which completely filled the bronchial tube and extended into some of the smaller branches. The tube in which this

cast was found was dilated, part of the epithelium had been destroyed, and in one place there was an ulcer. The disease had evidently existed for some time, though the only history I could get was from the nurse, who said he expectorated a great deal. He died from a traumatic injury and his lungs had not been examined prior to death. In two cases, I think, I used with good effect sulphate of zinc, in one and two grain doses, combined with other tonic treatment. One of these passed from under my care and eventually died, though I am certain his symptoms were much ameliorated while taking the zinc. The other case did well for a while; the patient now and then expectorating a cast. After awhile they ceased; but having hemoptysis he became alarmed and went to Colorado, where he has quite recovered. I gave the sulphate of zinc on account of its tonic and astringent properties, as well as for its corroborant influence upon the nervous system.

Dr. Newman: In speaking of the signs on percussion, in the case Dr. Engelmann reported, he observed that they were entirely negative, as a matter of course. I was not prepared to hear this, for it occurred to me that we might have expected an obstruction of a considerable part of the lung to exist so that air could not enter it. I should suppose the sound on percussion would be dull in consequence of the inability of the air to penetrate to the air-

cells.

Dr. Glasgow: There were some portions of the lung which were obstructed, but not sufficiently so to produce

dullness on percussion.

Dr. Engelmann: I think the explanation is quite correct. There is hardly enough collapse or infarction of the lung-tissue to produce dullness on percussion. In my case I do not certainly know that the patient was too feeble to expectorate perfectly, but all the masses that were expectorated came from precisely the same place. Each fragment was as large as a medium-sized lead-pencil, with several ramifications, and never longer than three and a half or four inches. As their pattern was always the same it seemed quite certain that they were derived from the same air-passages, and that the disease was limited to a definite area of the lung, however improbable this might seem at first sight.

An interesting consideration in cases of this kind is the distinction between croup and diphtheria, which they

render evident. On post-mortem, some residual matter was found in the affected bronchus, but the mucous membrane lining it was scarcely affected. It was not thickened—perhaps it was a little injected—it was somewhat more succulent than that of the corresponding bronchus on the other side, but it was smooth and perfect. Now although cropous pseudo-membranes were constantly cast off from the surface of this mucous membrane, it retained its anatomical integrity, while in diphtheria the deposit occurs within the thickness of the mucous membrane itself, which is thus rapidly destroyed.

Dr. Mudd: I do not understand how perfect casts from a tube, three or four inches long, without more than two or three ramifications, could be expectorated. I do not know from what part of the bronchial tube they could be

derived from.

Dr. Engelmann: The entrance of other tubes into the larger bronchus was indicated only by small openings. There is no cast joining the main one, probably because the smaller bronchi were not diseased, or at any rate

nothing was furnished by them at the time.

· Dr. Prewitt: A gentleman who spoke of these cases has said that all the cases, excepting one referred to by Dr. Porter, got well; that is, they did not die. The first case of this kind that came to my knowledge was one of a Dr. Wilson, reported in the St. Louis Medical Journal for 1869. In that case casts were expectorated for months, but the patient did not die. In this fact we find a marked distinction between croupous and diphtheritic affections. Within the last few years we have had no end of dissertations upon the identity of diphtheria and croup. A few years ago one of our leading authors wrote to prove a clear difference between the two affections, yet he has since retracted what he had said, and has delivered a lecture in which he maintains the strict identity of the two diseases. This, I believe, is the general teaching in Europe upon the subject.

Now we know that one of the characteristics of diphtheria is its poisonous influence upon the system. Yet none of these chronic cases under discussion presented any symptoms of paralysis; none showed anything beyond local trouble, and certainly no one would ever suppose them to be allied in nature to diphtheria. If, nevertheless, it be affirmed that they are diphtheritic, why then

should it not be said that croup, which furnishes almost identically similar casts, though from the upper portion of the air tubes mostly, is also diphtheritic? I consider this an important query in the pathology of this matter, because the treatment depends, to a certain extent, upon its answer. No one would think of resorting to a depressing treatment in diphtheria, yet it is often instituted in croup, and, as many practioners affirm, with the best results. Practitioners in the United States and elsewhere long treated croup without knowing that such a disease as diphtheria existed, yet we are told by many pathologists that the two diseases are of identical nature. It seems to me that the specimens before us are a sufficient answer to any such doctrines.

Dr. Glasgow: I think that Dr. Prewitt assumes the identity of croup with the chronic bronchitis we are now considering on the basis of his remarks. This is not altogether legitimate. Croup is an acute disease; this is essentially a chronic one. The symptoms are not only widely different, but the secondary sympathetic disturbances are likewise wholly dissimilar. The false membranes may present a similar microscopical aspect, but they make their appearance amid a wholly different train of symptoms. So that I do not think it possible to argue from the symptomatology of a chronic plastic bronchitis with reference to the vexed question of the relation of

diphtheria to croup.

Several gentlemen have spoken of the results of treatment in these cases. If they consult the records on the subject they will find that the disease is fatal. It may be so in two ways, either by progressive asphyxia through stoppage of the bronchial tubes, or if it lingers, the patients die of phthisis.

Dr. Prewitt: Do you believe in any identity between

croup and diphtheria?

Dr. Glasgow: No, sir, I do not.

More About the Nucleus in the Red Blood-Corpuscle.

By Chas. H. Stowell, M. D., Of the Physiological Laboratory of the University of Michigan.

Since communicating to you my last, several experiments have been performed at the laboratory, to further

decide the question of a nucleus in the red blood-cor-

puscle of the mammalia.

In answer to your note, we would say that this nucleus has been seen by several histologists and physiologists, both in this country and abroad; but when their methods of work have been published, and others have followed their directions, errors have invariably been pointed out, and the then so-called nucleus was absorbed in "optical delusions," and changes brought about by the reagents used.

My experiments were performed on cats and rats, poisoning them with solutions of corrosive sublimate—in some cases bringing on death immediately, in others not until the lapse of several days. The blood was examined both before and after death, and no change was discerned in the appearance of the blood-corpuscles, except in a few instances, when there was noticed some change in their shape. This is not what one would anticipate from a perusal of Prof. Boettcher's article.

However, by following the method given in the last number of your journal, we have demonstrated this nucleus in the red corpuscle of man (as previously reported), the dog, cat and rat. The most satisfactory results were obtained from the blood of the rat; the most unsatisfactory from that of man. No value, however, is attached to this fact.

By using higher powers than at first employed, we are positive there is a granular appearance to this nucleus, not present in other parts of the blood cell. In some cases this is quite marked, especially when the nucleus is large; and also in those corpuscles where we have seen a nucleolus, this granular structure is very evident. This is what we should expect when accepting Beal's theory of

of protoplasmic matter. In some specimens examined, the proportion of nucleated to non-nucleated cells was very small indeed, while in other specimens the proportion was much greater. The question to decide is—Has fasting or feasting anything to do with this? Upon this point you may expect to hear something further, as the results of experiments we intend to make

this summer.—New Preparations.

Strong Testimony Against Alcoholic Drink.

A LETTER from Dr. Fothergill, of London, to the Philadelphia Times, gives some account of the meeting of the British Medical Temperance Association, composed at present of thirty-five members, none of whom take alcoholic drink in any form. A number of highly distinguished men offered their testimony on the occasion. Spencer Wells stated that, in his operations, no alcohol was given, unless it was distinctly indicated; and that most of his cases never tasted alcohol, either at the time of the operation, or during the after-treatment. Then Dr. Rae, the famous Arctic voyager, gave some account of his experience in frozen regions. He was distinctly against its use in cold climates, and, so far, was in perfect harmony with most other authorities.

Alcohol is not adapted for great cold, and the Highland gillie, who declined a proffered glass of whisky, on the plea that it was too cold, was doubtless speaking from an

instructive experience.

Then Groome Talfourd related his experience on the Indian frontier, far north, and said that whenever an Indian was found frozen to death, in the settlements, it was the invariable case that he had taken freely of spirits.

Then Admiral Hamilton told how long and strenuously he labored at the Admiralty to do away with the enforcement of the daily ration of rum, which used to be issued

to our seamen.

In fact, a very safe line, not likely to be much controverted, was this, viz: that alcohol does not agree with great heat or great cold. An East Indian surgeon, a tectotaler, of many years' standing, testified against arrack and brandy on the plains of Bengal.—Exchange.

On Constipation.

Constipation is due to deficient action of the small, and some portion of the large intestines. Of the small intestines, there are two operative causes: deficient secretion, and want of innervation, or muscular action. Deficient secretion in the small intestines may be due to some disturbance of the liver, and constipation, as a result, may date from some severe form of fever in which the liver

was involved. In such cases there is not a preponderance of fecal accumulation and impaction, but rather, instead, a sluggish action of the bowels, recourse to medicines being necessary to bring about a movement once in four or five days. The symptoms of deficient action of the small intestines, other than constipation, are usually negative; the one which gives the patient the most discomfort, is a dull indefinite headache, located in the posterior part of the head, and is best relieved by such remedies as will promote a free discharge of bile. The tongue is not usually large and flabby, but is reddened along the edges and tip. The secretions of the mouth are commonly viscid. The treatment should not consist of mild cathartics, or purgatives, as the condition of the case would be provoked by them, but what is necessary is to increase the amount of fluid in the intestines by causing the patient to drink a great deal more water than is his custom. The laxative action of the water may best be insured by the addition of some mild saline; the reason of this is the mixture formed by the union of some saline with water does not readily pass from the intestinal mucous membrane into the general system—water being retained in the intestinal tube by the saline, excites peristaltic action of the bowels, and so produces an evacuation of its contents. To increase the power of action of the intestines the author uses small doses of quinine, combined with sulph. magnesia, e. g. sulph. mag. 3 i., sulph. quin. gr. i., mixed and drank in a glass of water every morning. It takes, however, usually from one to two weeks before much effect is noticed.

Deficient innervation of the small intestines, as a rule, accompanies constipation in elderly persons, and also in those whose habits are sedentary. The means to be employed to overcome this form of constipation are quite at variance with those used in the form of constipation just spoken of. If much water is given this class of patients, weakening of their digestive powers, followed by loss of appetite, and heaviness in the head, will be the result. To increase the innervation of the secretory apparatus, in those who are obliged to remain at their occupations, water is applied externally. A sitz bath, with the water as cold as the patient can bear it, and have good reaction follow, will in very many cases work wonders. Sponging the spine and bowels with cold salt water, made as irri-

tant as can be borne, on rising in the morning, is a very efficient method of using water externally. Some cases are benefited by giving the bowels a local shower-bath.

Of the large intestines, the same causes work the same results. Deficient innervation is by far the most common in this form of constipation. Large fecal accumulations, resulting from want of nerve-power in the colon, or rectum, are usually present without the patient's knowledge, and rectal abscess may be the result. The treatment consists in keeping the rectum empty by means of enemata, but great care should be exercised against using the syringe every morning for any considerable length of time, as such a habit is likely to become fixed. After using the syringe to remove accumulations in the bowel, other measures for restoring lost innervation to the organ should be instituted. Strychnia used hypodermically into the sub-mucous tissue, often proves very efficient.—Thomson, in the N. Y. Medical Record.

Diagnosis and Treatment of Pleuritic Effusions.

DR. THOMAS BARLOW and Mr. Robert William Parker have just published some observations made by them at the Children's Hospital, Great Ormond Street, and at the East London Children's Hospital, on the diagnosis and treatment of pleuritic effusions in childhood. There is, say the authors, very little more difficulty in discriminating lobar pneumonia from pleurisy in children than in adults. It is when we have to do with bronchial catarrh and collapse, with broncho-pneumonia, or with the various forms of tuberculosis of the lungs, that difficulty constantly arises. They have repeatedly observed an amount of dullness due solely to collapse of lung quite equal to that produced by a localized pleuritic effusion. Although, too, broncho-pneumonia and tuberculosis are bilateral, the authors have seen three cases of bilateral empyema and three of bilateral serous effusion. With regard to the measurement of the chest, they have again and again verified Dr. Gee's observation (made with the cyrtometer) that "considerable increase in the sectional area of the chest may occur, and the length of the periphery remain the same, by the passage of the elliptical form into the circular." Rare forms of localized empyema

were also met with confined to the root of the lung, or situated between the anterior edge of the lung and the pericardium, or limited to the middle third of the thorax, or localized in two different and widely-separated parts of the same side. One case of diaphragmatic empyema closely simulated hepatic abscess. With respect to the latter fact, we may observe that even at its commencement diaphragmatic pleurisy of the right side may be mistaken for hepatic or abdominal mischief, inasmuch as children often refer their pain to the wrong situation, and the affection may be ushered in by vomiting and purging. There is often, too, a good deal of tenderness about the upper region of the abdomen, and bilious vomiting is often a marked feature in cases of diaphragmatic pleurisy of the right side. Moreover, the authors say nothing about the frequency with which the first symptoms of an attack of acute pleurisy point more to the head than to the chest. Their observations are certainly confined to the stage of effusion, but their experience with regard to the above fact would nevertheless have been interesting to the reader.

Passing on to another point, the delusive character of friction rale did not escape the attention of our authors. "In one case," they remark, "we heard a typical friction rale over a spot from which immediately afterward three

ounces of pus were drawn."

The difficulties of diagnosis between serous and purulent effusion are generally acknowledged. Contrary to what is usually stated, in cases of serous pleurisy there is sometimes very marked hectic, whilst with empyema there is often a very moderate degree. The observations of the authors on this subject are very original, and worthy of attention. "It has appeared to us," they say, "that the aspect of the patient—a peculiar anæmia, with an earthy complexion-and, above all, clubbing of the finger-ends, have been the most characteristic features suggesting empyema rather than serous effusion. have never seen a case of serous effusion accompanied by clubbing, and we have seen very few cases of empyema where it has not been present to some degree, even when the illness has been only of a few weeks' duration. So frequent is the association that, we believe, if a child be seen with general pallor and clubbing of the fingers, one ought to think of empyema rather than of the other causes

of clubbing, viz: chronic bone-disease, bronchiectasis, and congenital heart-disease."

With regard to the natural course of pleuritic effusion in childhood when unmodified by surgical treatment, the authors remark that retraction of the side is not to be taken as a positive proof that absorption has taken place that no limit of time can be enunciated as to when a serous effusion will become purulent—that the effusion may continue serous for upward of two months-that purulent effusion is extremely frequent in children—that the shortest period at which they were able to establish the presence of pus was fourteen days—that in the great majority of cases empyema in children is not secondary to tuberculosis—that of the various modes of spontaneous evacuation of the pus, rupture through the lung appears the least unfavorable—that with regard to evacuation by external opening their experience does not supply them with a single really good result, and that the issue of a large number of these cases when left to themselves is most disastrous.

On the subject of treatment we are furnished with advice that appears to be remarkably judicious. gard to serous effusions, the value of the exploratory puncture is urged not only as a diagnostic but as a therapeutic measure, inasmuch as cases were seen in which it was impossible to resist the conviction that the removal of a very small quantity of fluid has been rapidly followed by absorption. If the effusions be considerable paracentesis should be performed at once, not only to relieve dyspnæa, but to give the lung a chance of re-expansion before adhesions bind it down. There is very little confidence to be placed in medicines; but the external application of iodine, combined with the internal administration of iodide of potassium, has in some cases proved beneficial. As to purulent effusions, if the exploratory puncture reveal the presence of pus, we are recommended to withdraw as much as possible with the hypodermic syringe. The possibility of multiple collections of pus should be borne in mind; and if the quantity of pus be incommensurate with the extent of the dullness subsequent punctures should be made, as experience shows the safety as well as the utility of the measure. If the hypodermic syringe does not remove all the pus present, it is better to introduce the aspirator trocar (especially that of Dr. Potain made by Matthieu, of Paris), and to withdraw as much of it as possible. In most cases, aspiration was performed under anæsthetics, in order to facilitate a thorough exploration, to avoid shock and collapse, and to avoid the troublesome cough that usually occurs after paracentesis thoracis. Chloroform preceded by small doses of brandy was the chosen anæsthetic. The angle of the scapula, was the chosen place for puncture when the effusion is general. A single aspiration is generally sufficient, but successful results have been obtained after repetition of the aspiration up to six times. If the pus should become fetid, or rapidly re-accumulate in large quantity, permanent drainage is recommended; and in all cases this should be by a double opening. If possible, the first opening should be made in front of the thorax, and the second below and internal to the angle of the scapula. A long probe, threaded with a piece of drainage tube, may be passed downward and backward from the first opening, and the second incision made over the point of the probe when it is felt through the integuments. The drainage-tube should then be drawn through and secured by tying the two ends together.

Such are the most prominent points dwelt upon in the interesting pamphlet of Dr. Barlow and his coadjutor Mr. Parker. We have drawn particular attention to it as it represents, in respect of a very common and serious affection, the most recent practice and experience of a physician and a surgeon attached to the two largest children's hospitals in London.—Dublin Med. Press, July 3, 1878.

On the Use of Curare in the Treatment of Epilepsy.

BY DR. C. F. KUNZE.

My experiments with Curare (Woorara) in thirty-five cases had very different results. Nine of the thirty-five cases made a perfect recovery. In most of them the disease had not been existing for a long time, say one, three or five years; in two of the successful cases the patients had been epileptic subjects for over twenty years. Among those who recovered there were some cases in which the disease had produced a well-defined influence on the mental condition of the patients. Two of the cases which

recovered were undoubtedly cases of inherited epilepsy; the history of these (brothers) is given below. I could obtain no good effect in old drinkers. My experience with Curare leads me to say that Curare is one of the most efficient remedies for epilepsy. A case of epilepsy should not be regarded as permanently cured, until a long time after the occurrence of the last attack. A short time ago I saw the return of the disease after an apparent recovery, extending over a period of four years.

I made a solution of Curare according to the following

formula:

Ry Curare, grs. vii. ss. $(7\frac{1}{2})$ Aqua. dest. m. 75. Acid hydrochl. pur. m. i.

hypodermically, and I inject about eight drops every five

or six days.

The addition of this small amount of hydrochloric acid makes the solution a clear one, and by this slight modification of my former formula I have avoided almost entirely the severe abscesses at the point of injection, of which

I spoke in the first edition of this book.

History—Edgar and Hugo Ufer are the sons of a subaltern officer in the Internal Revenue service at Botterfeld, Prussia. The father sustained a severe injury on the head, when, in 1846, during his service as a soldier he tried to stop the runaway of four horses attached to the carriage of the late King Frederick William IV. of Prussia. He was thrown down, dragged along for a distance, and received a kick on the head by one of the four stallions. In consequence of the injuries brain symptoms developed, and the man suffered for over a year from convulsions and very severe headache. Five or six years later the injured man married and became the father of two sons, both of whom were attacked with epilepsy, one in his eigteenth and the other in his thirteenth year.

Hugo, the elder of the two brothers, is now twenty-five years of age, and of sickly constitution. The first attack occurred July 6th, 1871, lasting for about one minute, another attack of somewhat longer duration took place the next day, being followed by three attacks on July 9th, occurring with intervals of from four to five hours. July 10th, again, three attacks; July 11th, a light, and three-quarters of an hour afterward a severe attack, lasting for

about fifteen minutes. This last attack commenced with a disposition to weep, dizziness in the head, followed by a sudden unconsciousness. After the attack was over, there was a sensation of numbness over the entire body, the speech was heavy, the patient felt very tired and suffered from a very severe headache. From July 11th to July 16th, generally, three attacks occurred daily. July 16th, 1871, the first injection of Curare was given. After the injection the patient felt slight symptoms of unconsciousness and dizziness, until, toward night, he felt perfectly well.

No more epileptic attacks occurred after the first injection. Once every week I gave the patient an injection. After three weeks the prodromatic symptoms, indicating the coming attack, became prominent, but disappeared soon after the prompt injection of Curare. After I had, during the period of six weeks used about 3 grs. of Curare I omitted the injections, and until to-day (end of 1877) no more attacks have occurred.

Edgar, the younger brother, is now about twenty-one years of age, and is also not very strong. The first severe attack occurred March 21, 1870, the second in June, the third in November, 1870. The duration of the first attack was not quite an hour; with the second one the patient was unconscious from four P. M. until midnight. tacks came on without the outcry, and commenced with the sensation as if a stream of cold air was flowing from the mouth. Between the large attacks small ones of a few minutes' duration always occurred. The first injection of Curare was given July 20th, 1871. From July 21st to July 25th there was some dizziness, and the patient felt as if an attack was coming on. This sensation, however, disappeared before long, and not a single attack occurred since that up to date (1877). The quantity of Curare used also amounted to 3 grs.; the injections were first given every week, afterward every second week.

Hugo Noack, in Halle, Y. S., suffered since infancy from convulsions, which first commenced when he was only half a year old and returned about once in four weeks. No other member of the family ever had epilepsy. The attacks always were complete. As to the cause of this disease, the mother of the patient states, that she once nursed the child shortly after a time of great anger. She says the attacks first made their appearance two hours

later, and never disappeared since. The unfavorable influence of the disease on the patient's mental faculties was well-defined; during the age of school years he did not learn well at all, and especially his memory was gone almost altogether. The attacks occurred so frequently that hardly a day or night passed by without convulsions. Noack came under my treatment in his 23d year. After from six to eight injections the convulsions disappeared, and since then, for about eight years, no attack has occurred. Noack is now thirty-one years of age, married, and is the father of two children, none of whom have suffered from convulsions, up to this time. His mental faculties, and especially his memory, have greatly improved since his recovery. Noack is employed now on one of the large railroads and fulfills his duties satisfactorily to his superiors.—Paul H. Kretzschmar, M. D.

Clinical Lecture upon the Treatment of Chronic Disease of the Nasal Passages, Eustachian Tube, and Middle Ear.

BY GEORGE STRAWBRIDGE, M. D.,

Professor of Clinical Otology, in the University of Pennsylvania Medical School, Philadelphia.

As far as therapeutical remedies for the treatment of these diseases go, they are very few in number. Among those which are sometimes employed may be named the muriate of ammonia and iodine vapor. The latter I have given up entirely, as it has never had the least beneficial effect in my hands. If the Eustachian tube and middle ear are filled with mucus it must of course be at once removed either by means of the catheter or by Politzer's bag. Of the two, I prefer the bag. The introduction of the catheter must always of necessity be a great source of irritation to the patient, and its effect is no better than that which may be had from the use of the bag.

How then are we to set about the removal of a chronic catarrhal condition of the above passages? If the catarrh began in the pharynx it will be sufficient to treat it there, and when it leaves the pharynx it will also leave the Eustachian tube and middle ear. There will always, however, be a few cases in which the condition will continue in the ear after the disease has been entirely expelled

from the pharynx. In such cases I am accustomed to make use of a solution of zinc. This of course must be applied through the catheter, for Politzer's bag will not at all answer the purpose. I am in the habit of first introducing the catheter and dropping into it three or four drops of a solution of zinc (3-5 gr. to the f. 3 j.), then by means of the bag I force the zinc through the cavity of the catheter into the ear. In a large number of cases, such as the above, I have also treated the disease by solutions of the nitrate of silver applied by means of a post-

nasal syringe introduced behind the soft palate.

In other old cases of chronic catarrh of the middle ear, where the secretions have ceased and the function of the mucous membrane has become depressed, it is often of great benefit to stimulate by some means the membrane to re-secretion. In such instances there is commonly a marked tendency to peeling of the skin, and slow atrophic degeneration. A number of vapors have been recommended as local applications here. Dr. D. B. St. J. Roosa, of New York, places great confidence in the use of steam for the cure of these conditions. The vapor to be thrown through the catheter into the Eustachian tube. He claims for this agent a double effect upon the parts, first stimulating and then relaxing. The method of application is very easy. It is of course necessary to use a gum instead of a metal catheter. The steam is generated in a boiler and conveyed to the catheter by a connecting gum pipe.

Four years ago I used steam very largely, but of late I have given its use up entirely, and for two most excel-

lent reasons.

1st. Because I found that it did absolutely no good in

my hands, and-

2d. Because I discovered something far more useful and beneficial to my patients. After I gave up the application of steam I used for a long time the vapor of the muriate of ammonia. This vapor was generated in an apparatus made particularly for the purpose, and was conveyed to the catheter through tubing. After making trial of this vapor for a year I gave it up likewise.

Now, in chronic thickening of the middle ear I use ether; my method of applying it is by means of Politzer's bag. I drop 8-10 gtts, of the ether into the bag. The patient takes some water in his mouth and holds it there. A nose-piece is put in his nose, and just as he is swallow-

ing the water I squeeze the ether through the nose-piece into the passages. I have had a very large experience in the use of ether in these cases. I hold that ether is the very best application that has ever been tried, and I offer as my proof the following reasons:

1st. Ether is very highly stimulating.

2d. It has a powerful anodyne effect, particularly in cases where tinnitus aurium is a symptom.

3d. It is an absolutely harmless remedy.

I have never had any bad effects from its use. In one or two cases there was a momentary nausea or giddiness, but these symptoms at once passed away. I have often used as much as 30-40 gtts. of the ether at one time. Drs. Politzer and Gruber, of Germany, recommend a mixture of one part of chloroform and two parts of ether as a topical remedy, but I can not divest my mind of the idea of danger in such a use of chloroform; and what is more, the ether alone, I think, does just as much good. It is usually thought that Dr. Toynbee, of London, the great authority on diseases of the ear, killed himself by the introduction of chloroform into the Eustachian tube and middle ear. At any rate he was found dead in his laboratory with his instruments and open bottle of chloroform lying beside him at a time when he was known to be experimenting in the above-mentioned way with the drug.

You will very often be asked for your opinion with regard to the use of electricity in obstinate cases of the above diseases. Many years ago I sent abroad and purchased a seven hundred-dollar electric battery—one of the very best to be procured in the European markets. I tried my battery upon my patients for four or five years, and I do not think I ever saw one case which was in the least benefited by the electric treatment. With regard to the proper way of applying the electric current, it may either be applied with one pole introduced through the catheter into the Eustachian tube and the other pole at the outer ear, or, if this way be not convenient, one pole may be held in the hand and the other introduced into

the outer ear.

One or two gentlemen have made use of bougies where there was narrowing of the caliber of the parts, thinking thus to dilate the stricture. In no recorded case has any benefit been derived from this treatment.

With regard to constitutional measures. In those cases

to which I have just been directing your attention there is no regular constitutional treatment necessary. Where, however, the disease has been hereditary and has run through many generations the case will only go on from bad to worse unless something be done to bring up the general tone. In this connection I have used two or three remedies with decided advantage. If there be any taint of strumous diathesis I order the bichloride of mercury internally for a long time, and in small doses. A number of high authorities are agreed upon the value of the bichloride of mercury.

The following is a good form of administration:

R

Hydrarg. chlo. corrosivi. . . . gr. $\frac{1}{60}$. Elix. cinchonæ. . . . f. $\frac{1}{5}$ ss.

M. S. Two or three times a day after meals.

Iron is also an excellent drug in this connection. A small amount of strychnia may, with advantage, be joined with the iron in pill form. In old people, where there is a very decided lessening of the secretions, I give ten grain doses of the muriate of ammonia thrice daily. In ordering this drug I leave directions to have it dissolved in f. 5 j. of cinch. elixir, and this again suspended in half a pint of acid water. Muriate of ammonia, like iodide of potassium, should never be admitted to the stomach un-

less in a highly diluted state.

I spoke to you early in the hour of the value of ether in cases in which tinnitus aurium is a prominent symptom. Here are two cases whose history I wish to relate to you. This young man has had the tinnitus for seven years. The noise goes on all the time. It worries him horribly at night. In the daytime he seems to be constantly followed by some one who wishes to speak with him. His mind is not as yet affected. The noise is like the sound of water falling, and leaves stirring. In this other case the symptom has been prominent for sixteen months. The noise is like escaping steam. The trouble is diminished by the use of a light diet. This disease is very common in every-day practice. The agony it entails is often altogether intolerable. Quite recently a cultivated and wealthy gentleman in New York was driven by it to commit suicide. Life was no longer bearable for him.

Here is a patient the drums of whose ears are perfectly white. I will force 8 gtts, of ether into the passages and

now let me show you the result. The drum is all of a bright pink color. The man does not feel any the worse for the application.—New York Hospital Gazette.

Pathological Society of Philadelphia.

THURSDAY EVENING, September 12, 1878.

Mechanical Microtome.—Presented by Dr. C. Seiler.

I exhibit to the members to-night a mechanical microtome of novel construction, which I designed for the purpose of making large, thin, and even sections of hardened tissues. A mechanical microtome in which the knife is held rigidly by moving parts of the instrument itself has been a desideratum for a long time, and many workers have designed and constructed such contrivances; but all of them started with the erroneous idea that a slide upon which the knife is fastened, and which runs at an acute angle to the tissue imbedded, would carry the knife through the tissue by a sliding motion, such as is produced by the hand alone making the section. This, however, is not so, and by means of such a slide the knife acts like a carpenter's plane, pushing through the tissue like a chisel instead of cutting like a knife.

By analyzing the motion of the arms in making thin sections I came to the conclusion that if the knife was attached to two arms, which are allowed to rotate upon fixed pivots attached to the section cutter, the knife would pass through the tissue, each point of the cutting edge describing a curve whose radius is the two arms carrying the knife. The principle is identical with the one upon which the parallel rule is constructed, one blade of which being fixed allows the other to move to and fro in the

same manner as the knife in this case moves.

After constructing a rough model of the apparatus, I asked my friend Mr. T. Zentmayer to construct the instrument. In doing so he added many improvements in the motion, and in the adjustment for different inclinations of the knife, which insure a perfect working of the instrument even in the hands of unskilled persons.

The specimens cut with this machine, which I have brought to show what can be accomplished in the way of large and thin sections, are: a longitudinal section of the leg of a five months' fœtus from the knee downward, meas-

uring two inches in length and three quarters of an inch in width at the widest part; a section of an epithelioma from the cheek, one-half by three-quarters of an inch; and a longitudinal section through the upper and lower maxilla of a five-months' fœtus, taking in the turbinated bone, measuring one and one-half by one and one-quarter inches.

It is needless to point out the great advantage of large sections, especially of pathological tissues, and I have no doubt that when this instrument becomes generally used we will have more and better microscopical examinations of tissues than at present, since many who would gladly work with the microscope are deterred from it by the difficulty of making thin sections.

Neuralgic Tumor of the Skin.—Presented by Dr. H. Lenox Hodge.

The tumor which I present to the Society to-night was removed last April from the forearm of a man about 48 years of age. There has been no return of the growth, and the patient has been entirely free from all pain.

The tumor was rounded, and measured six-eighths of an inch in diameter at its base, and in height five-eighths. It was of a bluish color, and was extremely sensitive. The painful character of the tumor was its most remarkable characteristic. Even the rubbing of the patient's shirt upon the tumor was very painful. A slight pressure upon it would cause him to faint.

He first noticed it sixteen or seventeen years ago, on the outer side of his right forearm near the olecranon. It was then a small nodule like a bead, and not at all painful. About seven years ago the pain began, and has been steadily on the increase, until life became a burden and he was filled with a constant terror lest the tumor should be touched or pressed upon.

During all these years the growth has increased very slowly in size. It contracted no adhesions to the deeper

tissues, but remained perfectly movable.

This colored drawing which I exhibit has been carefully made by my friend Dr. Taylor, Resident Physician of the Children's Hospital. It accurately represents the appearance, color, size, and situation of the tumor.

Dr. Seiler has kindly made the microscopical examination, and has placed a beautifully-stained section be-

neath the microscope for examination by the members of the Society. His description of its structure states "that it presents on section a network of well-developed connective tissue, the meshes of which are irregular as to size and shape, and are filled with both red and white blood-corpuscles. The dermis and epidermis covering the tumor appear atrophied, while the growth itself resembles the corpus cavernosum of the penis."

The tumor, as the section shows, extends below the surface of the skin, and it appears probable that it arose in the connective tissue and gradually trespassed upon the skin. Notwithstanding its painful character, no connection with any nerve-fiber has been detected. By its growth it has probably pressed upon the minute nerve-filaments in the skin, and thus given rise to the intense neuralgic pain.—Philadelphia Medical Times.

The American Gynæcological Society.

THE third annual meeting of this Society was held in Philadelphia, at the hall of the College of Physicians, on the 25th, 26th, and 27th of September, 1878. Twentyseven Fellows of the Society were present from different parts of the Union, principally from the States east of the Alleghenies. Although the association can date its birth no farther back than the Centennial year, it has, from the first, taken a position in the front rank of organizations devoted to special departments of medical science, its published transactions have met with a flattering reception and ready sale, and medical reviewers, with one accord, have spoken of them in terms of unqualified praise. The active membership is limited by organic law to sixty Fellows, and in order to maintain the high standard adopted it is prescribed that each new aspirant for membership must accompany his application with an original paper upon some subject connected with gynæcology, which essay is examined and reported upon by a committee before the candidate can be balloted for. A few Honorary Fellows may also be chosen.

FIRST DAY.

The meeting was called to order by Dr. Goodell, first vice-president, at 10.30 A. M., and a brief address of welcome was delivered by Dr. A. H. Smith. After the call-

ing of the roll, the Secretary announced the names of a number of guests who were invited to take part in the discussions.

Dr. J. C. Reeve read a report of a multipara, in which rupture of the perineum took place without implication of the vulva, the labor being otherwise uncomplicated, but very rapid. Prompt attention during the early stages of labor, and the application of the forceps where indicated, will generally prevent this accident, which occurs most frequently in primipara, or in others where cicatricial bands exist in the lower portion of the vaginal wall.

Professor White advocated lateral incisions in the perin-

eum where laceration is threatened.

"The Surgical Treatment of Stenosis of the Cervix Uteri," a voluminous article of 250 pages, by Dr. J. Marion Sims, of New York, was presented and extracts read from it by the Secretary. The author advocated Simpson's bilateral incisions of the cervix in those cases of anteflexion, complicated by stenosis, where the lips of the uterus are not relatively changed by inflammation. Sims' operation of antero posterior incisions, however, is urged where the posterior lip is thickened and elongated. A glass plug is inserted after the operation, and the vagina tamponed. The patient keeps her bed for several days, as pelvic cellulitis may appear on the fifth or sixth day, and Dr. Wilson, of Baltimore, in the discussion of the paper, reported a death on the fourteenth day. Dr. Sims had operated upon nearly a thousand cases and had two deaths.

Dr. Elwood Wilson, of Philadelphia, did not favor the operation described. He had found simple dilatation to

accomplish all that is desired, with less risk.

Dr. Noeggerath pointed out the fact that while these incisions are intended to strengthen the canal of the cervix in a case of anteflexion of the second degree they fail to accomplish this, which he demonstrated by a diagram. They also invade the parenchyma of the uterus where there are lymphatic vessels and glands, and may thus lead to septic poisoning. He believed that most of the cases reported cured were, in reality, only temporarily relieved.

Dr. Fordyce Barker had encountered at least a hundred cases where this operation had been ineffectually performed for the relief of the condition referred to, and was cognizant of nearly a score of deaths from it which had

never been published. He believed that precise rules for the recognition of cases requiring this operation are still wanting, although it has been before the profession for

nearly thirty-three years.

Dr. Emmett formerly had performed this operation very often, but his observation had taught him, where the flexion occurs above the plane of vaginal junction, that it is generally the expression of trouble elsewhere. If the condition result from pelvic cellulitis or adhesions, the operation will fail to give more than merely temporary relief.

"A Case of Extra-Uterine Pregnancy, with Discharge of Fætal Bones through the Bladder," was reported by Professor White, of Bullalo. The patient was not married, and the symptoms at first were those of dysmenorrhæa and menorrhagia. In May, 1875, this condition had existed several months, and Dr. White, being called in consultation, detected an indistinct tumor in the left iliac region. perceptible also in the vagina, which was thought to be a hæmatocele, pregnancy not being suspected. A puncture was made with the exploring needle, which brought away a few drops of a light, straw-colored fluid. Severe peritonitis followed the operation, but after it subsided the tumor was scarcely perceptible. but the clear fluid continued to come away for some time, as if a vesico-vaginal fistula had been established. In December the patient complained of vesical pain and tenesmus, and upon examination a bone was found at the urethra, and during the next three months small bones were frequently discharged, some of which were coated with calcareous deposit. The discharge of fœtal bones through the bladder was declared to be a comparatively rare accident. The case illustrates the truth of Dr. Parry's statement, that cases of extra-uterine fætation should be left alone, as they do better if left to nature than when attacked with the knife.

Dr. John C. Atlee remarked, as an exception to this rule, that where there is danger threatening to the mother, an operation becomes necessary. He reported a case successfully operated upon by Dr. W. F. Atlee, of this city. He insisted that the placenta in such cases must not be interfered with by the surgeon, but the cord should be tied, cut short, and dropped into the abdomen.

A case of "Head and Foot Presentation in which a Fracture of the Spine occurred in Utero," was made the sub-

ject of a paper by Dr. Johnson, of Washington. In a similar instance of head and foot presentation, but complicated by placenta prævia, Professor Penrose had succeeded in effecting version by placing a fillet around the presenting ankle and making traction upon it at the same time that

the head was being pushed upward.

"The Necessity for Early Delivery, as demonstrated by the Analysis of One Hundred and Sixty-One Cases of Vesico Vaginal Fistula," by Dr. T. A. Emmett, of New York, was a paper of great practical importance, demonstrating the danger of delay in the second stage of labor, and the value of the forceps in cases of impaction in the excavation. He laid down the rule that when the head ceases to recede after each pain, the forceps should be applied. He had never seen a case where vesico-vaginal fistula was directly attributable to the use of the forceps.

In the discussion upon the paper, it was highly praised by Dr. Fordyce Barker, who said that the danger from the use of the forceps in competent hands had been greatly overestimated. The importance of evacuating the bladder before artificial delivery must always be remembered. Dr. Penrose believed that the most valuable point in this paper was that the author had defined with precision the exact period when the forceps should be applied. The head only ceases to recede when it has become impacted in the canal. Drs. Atlee, A. H. Smith, James P. White, Goodell, and others, spoke in commendation of the forceps where judiciously and skillfully used, but condemned their ignorant application as leading to injury, and often to lacerations of the cervix uteri. Dr. Storer, of Boston, had not met with a rupture of the perineum where the forceps had not been employed; but in the hands of experienced men it was generally admitted that tearing of the perineum may be prevented in many cases by the forceps, which give the operator control of the head. Where the head is impacted, and the bladder distended, Dr. Barker recommended the use of the aspirator.—Philadelphia Medical Times.

SECOND DAY.

THE HAND AS A CURETTE IN POST-PARTUM HEMORRHAGE.

Dr. H. P. C. Wilson, of Baltimore, read a paper upon the above subject. It embraced a detailed description of a case of severe post-partum hemorrhage, in which, after all means at hand had failed, the bleeding was arrested by introducing the hand into the uterus and raking the placental surface with the finger nails. The labor was uncomplicated. The hemorrhage came on without apparent cause. The hand was carried into the uterus, the clots turned out, and the organ excited to contraction until the hand was expelled. Ice was also carried into the uterus, and the operation of emptying the organ of clotted blood was repeated four times. Ergot was given by the mouth, by the rectum, and subcutaneously. Still the uterus relaxed, and the case became very alarming. The use of the hand as a curette suggested itself to Dr. Wilson in the emergency, and it was at once introduced and the placental surface raked with the finger-nails. There was no bleeding after the first raking, although the uterus relaxed and the hand was carried into the cavity, and the raking process was repeated. For about fortyfive minutes the uterus remained enlarged and its mouth patulous after the second raking. Then severe after pains set in, produced firm contraction, and there was no further trouble in the case. The patient made a good recovery. Dr. Wilson's experience in the case related was so satisfactory, that in the future treatment of post-partum hemorrhage, he should not hesitate to use the hand to the placental surface as a curette, provided prompt contraction of the uterus could not be produced by the ordinary means at hand.

THE TREATMENT OF POST-PARTUM HEMORRHAGE

was the title of a paper then read by Dr. R. A. F. Penrose,

of Philadelphia.

After making some remarks regarding the appalling character of post-partum hemorrhage, the necessity for instant and efficient treatment, Dr. Penrose passed to the consideration of the causes of this most alarming complicacation. The great cause was set down as uterine inertia, yet there were many other causes, such as partial attachment of the placenta, diseases of the uterus, etc., which must be appreciated in order to apply proper remedies. The most painful predisposing cause was a peculiar idiosyncrasy of the woman, giving rise to a peculiar flaccidity of the uterus. The design of the paper was to study the

relative value of certain remedies to be employed in the

curative treatment of this form of hemorrhage.

The relative value of friction, application of cold and heat, electricity, exciting reflex contraction by acting upon distant organs, etc., etc., was duly appreciated by all, and they were passed without extended comment. With reference to treatment of this form of hemorrhage, when it depended upon uterine inertia, what was desirable was a remedy which could be easily obtained under all circumstances, one which admitted of application in the simplest manner, and at the same time a remedy, the use of which would not be followed by injurious consequences. The actual cautery was an effectual remedy, and so was the injection of persalts of iron into the cavity of the uterus, but unfortunately they were exceedingly liable to produce disastrous results, or they might not be at hand. The same was true of other remedies which had been employed. The remedy of which Dr. Penrose made special mention for the arrest of post-partum hemorrhage was common vinegar. Since 1854 he had used it with invariable success. The advantages claimed for it were:

1. That it could be readily obtained.

2. That it could be easily applied, and without special apparatus.

3. That it always cured the hemorrhage, or, rather, it

had not failed in his practice.

4. That it was sufficiently irritating to excite the most sluggish uterus to contraction, and yet not so irritating as to be subsequently injurious.

5. That it was an admirable antiseptic.

6. That it acted upon the lining membrane of the uterus

as an astringent.

Dr. Penrose used this remedy in the following manner: saturate a rag with vinegar, carry it into the cavity of the uterus, and squeeze it. In the vast majority of cases the hemorrhage ceased as by magic when the vinegar passed over the surface of the uterus and the vagina. He believed that the salts of iron should seldom or never be used, but in case, which was supposable, in which the vinegar failed he would resort to that remedy.

The above papers being before the society for discus-

sion,

Dr. J. P. White, of Buffalo, remarked doubtless all would agree with Dr. Penrose that uterine inertia was the most

common cause of post-partum hemorrhage. The remedy which had been proposed by Dr. Wilson he regarded as valuable, but he was not able to understand the analogy between it and the action of the curette in the treatment of certain troubles affecting the internal surface of the nterus. Dr. Penrose had introduced a new remedy, but Dr. White was not prepared to accept it as one to be in-

variably successful.

Dr. T. G. Thomas, of New York, remarked that the question always arose whether the uterine inertia was primary or secondary. He believed that in a very large proportion of cases post-partum hemorrhage was due to mismanagement of the uterus during the time the child was being expelled and immediately afterward. He regarded the third stage of labor as tonic contraction of the uterus after the expulsion of the placenta, and to secure such contraction was the first duty of the obstetrician. With reference to the remedy introduced by Dr. Penrose, doubtless it was a valuable one, yet the idea that it possessed any specific action, or any remedy employed for that purpose, should be set aside, for it was altogether probable that they acted simply as local irritants to excite uterine contraction.

Dr. John T. Atlee, of Lancaster, commended the treatment spoken of by Dr. Wilson, and believed the hand and arm were the most ready and efficient remedy at our com-

mand for the arrest of post-partum hemorrhage.

Dr. A. H. Smith thought that post-partum hemorrhage was due to one of two causes, either distension or laceration. If the uterus was emptied it would contract, and the hemorrhage would cease. The main point in the treatment, therefore, was not to introduce anything into the cavity of the uterus which would prevent complete contraction. The means which he had employed with greatest success had been injection of hot water; the water should be injected at the same time the clots were turned out and at a temperature of 110° F.

Dr. Campbell, of Augusta, Georgia, thought the idea of irritating the placental surface was valuable and worthy of consideration. He spoke highly of the use of injections of tr. of iodine. He disapproved of the use of the persalts

of iron.

Dr. Englemann, of St. Louis, approved of the use of the

iron-salts, and had come to rely upon them in extreme cases.

Dr. Trask, of Astoria, Long Island, stated that an analysis of the cases in which iron had been used showed that the benefit which followed was due, not to its styptic, but to its irritant action. Injections of the tr. of iodine had been his favorite method of treatment.

Dr. Bozeman, of New York, believed that if compression was made over the fundus of the uterus at the same time the hand passed into its cavity to remove the clots, the

hemorrhage would almost invariably be arrested.

Dr. J. R. Chadwick, of Boston, thought that a very good remedy in these cases was ether used hypodermically. He had employed it in three cases with the effect of pro-

ducing prompt tonic contraction.

Dr. Barker, of New York, mentioned the hemorrhagic diathesis as one of the predisposing causes, and related a case in illustration. Because of the existence of this diathesis the woman nearly lost her life, notwithstanding the most vigorous prophylactic treatment. With reference to treatment of this form of hemorrhage he would, if possible, avoid introducing the hand into the cavity of the uterus, because of the liability to do injury by such procedure.

Dr. Wilson thought injury to the uterus was not likely to follow introduction of the hand when all the parts were relaxed. He had never used the persalts of iron and did not approve of their use. His hand was the therapeutical agent upon which he relied most, and he had never met with any injuries from its use that confirmed Dr. Barker's fears.

Dr. Penrose agreed with Dr. Barker that the hand should not be needlessly introduced into the uterus. He still regarded the remedy which he had proposed as one possessing special value because of its accessibility and ease of application.

Non-Contagiousness of Yellow Fever.

DR. Bell, editor of the Sanitarian, is acknowledged to be an authority on all sanitary matters. We cite the following from an editorial which appears in the October number of that journal:

"That yellow fever has not prevailed in New York and Brooklyn, and several other cities north of its more usual latitudes, the past summer, is not by any means due to certain acts of inhumanity which have been committed against the sick afflicted with it, and the well flying from it, but to the good fortune of these cities in that while they tolerate the local condition, they have not been subject to a continuous high temperature for several weeks—above seventy five degrees—also necessary to it. But the present exemption is no guarantee for the future. So long as people tolerate the local conditions, they continue to risk the recurrence of an exceptional season of high temperature, with results the same as have been in the past.

Yellow fever is eminently portable to places of like conditions as those in which it originates by means of fomites—clothing, books, dunnage, certain articles of merchandise, ballast; and, above all, by filthy vessel—packed up or closed in, in the places where and when the disease is prevailing; hence the necessity of quarantine of such materials until they are disinfected. But inasmuch as the disease is not personally contagious—is not communicable from one person to another—persons should in all cases be allowed their freedom, no matter what the degree of exposure to which they have been subject. And during the prevalence of an epidemic in any place, everybody should be encouraged and aided, as far as practicable, to escape from it as the surest means of safety.

"The sick with yellow fever should be cared for under such circumstances as will most conduce to their recovery; and as they are never dangerous to the surroundings, can not give the disease to any other person or thing. To remove such sick persons from healthy places, or take them from the care of their friends to out-of-the-way places, or, as has been practiced in New York and Brooklyn, take them to the Quarantine Hospital, is alike calculated to render such cases more dangerous, and to alarm the public on a false issue.

"In illustration of its non contagiousness: During naval service in the Mexican war the writer messed and slept in a room of about \$,000 cubic feet capacity, but sufficiently open for the wind to blow through it, with from five to thirteen yellow fever patients for his companions for several weeks; and in an adjoining room belonging to the

same building (the Salmadino Hospital, wholly built of unplaned pine boards, on an island near Vera Cruz), with an open doorway between, containing at no time less than forty, and for a large portion of the time over a hundred other cases, without taking the disease. But, subsequently, at the end of one week, spent on board an infected ship, he was stricken with it.

"Again: At Fort Hamilton, in 1856, while attending Dr. Joseph H. Baily, of the United States Army, with yellow fever, and fearing the worst results from a relapse which overtook him in that then badly infected place, the writer had him carefully transferred on a bed in an easy wagon to the family of a brother, and the nursing care of his devoted wife, in Fourteenth Street, New York, for which the public was none the wiser nor the worse. Dr. Baily, and those who took care of him, still live to rejoice over the result. It is almost needless to add nobody was made sick by the 'risk.'

"In the New York Quarantine, while in charge of the yellow fever hospital ship, in the lower bay, in 1862, and with yellow fever patients on board—the writer took his wife and young children on board for aeration, which they much enjoyed. And there he also permitted the devoted wife of a naval officer to watch over and bathe the brow of her husband during several days while he was in extremis with black vomit, to hold his hand at death, and to attend the burial. Thence she returned for a few days to the Mansion House, Brooklyn; and to her home. Noth-

ing but good ever came of it."

"During the same service in Quarantine, about the middle of September, the United States steamer, Delaware, belonging to the Quartermaster's Department, arrived from Port Royal with over one hundred of crew and invalid soldiers on board, infected with yellow fever. Three died on the voyage; three cases were sent to the Floating Hospital; and the great danger of forty six invalid soldiers, and more than as many more of other persons who had not had the disease, requiring immediate relief, was reported to the Commissioner of Quarantine. Three days having been fruitlessly spent in an effort to charter a hulk to which those well persons might be transferred, to cover the bugaboo period of incubation, and, meanwhile, from three to seven new cases occurring daily, the writer

took the responsibility of having every person on board, except necessary ship keepers, washed, and dressed in clean suits, and sent to the Floating Hospital. There he kept them, though in rather close quarters (with due allowance for the sick) for a week, by the end of which time a transfer vessel was obtained, on board which they were placed and kept (not by the advice or authority of the writer) for two weeks longer; but from the time they were removed from the infected ship, 'Delaware,' not another case occurred among them. So much for elimination, as against development."

MICROSCOPY.

The Structure of Cells.

As to structure, cells have been heretofore described as structureless, or variously granular, and with powers not exceeding two hundred and fifty diameters, they may be still so described. Few cells, even in these powers, are structureless, while on the other hand, a highly granular condition of a cell is considered indicative of some pathological change, except in the case of nerve cells, which in many situations are admittedly highly granular in the normal state. The same may be said of the nucleus. Occasionally, however, even previous to 1867, certain nerve cells were described as striated in appearance. Examples of structureless cells are most striking in the unicellular organism, as the amæba, in which we have a structureless nucleated mass, which owes whatever of structure it possesses to foreign particles, which it takes up as food. So far as the structure of the elementary part of the more complex organisms, however, is concerned, the recent discoveries by a power as low as three hundred diameters demand a total change in the description of the structure of cells. Henceforward we must describe not only the nucleus, but also the cellular substance (protoplasm) as fibrillar in structure, made up of a net-work of delicate fibers, the meshes of which are filled with an "interfibrillar" or "ground substance," which is structureless, and that the fibrillæ of the intracellular and intranuclear network are continuous. And if Klein be correct, we must

define the *nucleoli* as merely local thickenings, natural or artificial, of the *intranuclear* net-work. The *intranuclear* net-works are much more distinct than the *intracellular*.

THE SHAPE OF CELLS .- The shape of cells is extremely varied. In its fully developed state each tissue is composed of cells which may be said to be characteristic of it. First, the typical form of a cell may be said to be spherical, and this is the shape of all young cells in whatever shape found. Second, in glandular tissue, where, perhaps, cells are changing more rapidly than in any other situation in health, their deviation from the round shape is only such as results from mutual compression, forming, more or less, polygonal cells. Third, in epithelial structures we have upon the extreme periphery either flat scales containing a small proportion of bioplasm (nucleus) in proportion to the non-germinal matter (cell contents), and of irregular outline, forming the so-called squamous epithelium; or fourth, similar scales of regular outline, many-sided and with their edges so adapted as to form a pavement-like structure, forming tesselated epithelium; or fifth, elongated nucleated cells, which, from their shape, are called columnar cells. Sixth, in certain situations, as the respiratory passages, these columnar cells are further provided with hair-like prolongation, known as cilia, which, in health, exhibit a constant waving motion, whence these cells are called ciliated cells. Wherever columnar cells are present in successive layers (as is usually the case), they lose their characteristic shape and approach more and more the spherical outline as we recede from the surface, until the deepest and therefore youngest cells are again spherical. Seventh, in nervous tissues again, we meet cells which from their prolongations, which may be one or many, are called polar cells and unipolar, bipolar or multipolar, according to the number of processes they posses. Eighth, in the so-called connective tissue again, we have a variety in the shape of the cells. Thus in the annular tissue, or connective tissue proper, we have young round cells composed almost wholly of germinal matter, exhibiting ameboid movements and all the characters of the leucocyte or colorless corpuscles, as well as the elongated spindle-shaped nucleated cell, so characteristic as to have long ago received the name connective tissue corpuscle. These latter cells also

possess prolongations, which unite with those extending from adjacent cells, and, being hollow, thus form a canalicular system of exceeding fineness, which is believed to be capable of conveying nutrient juices in the absence of blood-vessels of sufficient size to conduct the corpuscles of the blood. Ninth, the cells of striated muscular tissue exhibit a prolonged oval shape, sometimes resembling that of the connective tissue corpuscle, while the cells of unstriped muscular tissue are typical spindle cells, with

bellied centers and staff-shaped nuclei.

Again, in cartilage we have cells exhibiting various modifications of the spherical shape, while the cells of bone gives us a tenth form. These are contained in correspondingly irregular cavities in its substance, and are almost fantastic in their irregularity, exhibiting also prolongations which unite with those of neighboring bone cells, and with the Haversian canals which conduct the bloodvessels through bone. The shape of the cells through whose agency the teeth are formed is also seen to be peculiar, those whence the dentine is developed being provided with a single long process, giving an eleventh form of cell. Those producing the enamel are also columnar, while the crustra petrosa, or portion of bone-like substance covering the fang, contains cells similar to those of bone.

Finally, the cells of adipose or fatty tissue require allu-They are spherical or compressed vesicles or sacs of considerable size, are filled with oil, and exhibit in consequence a brilliant, highly refracting character, under the microscope, indicated by a broad dark border and a transparent center. In the beginning they are in no way different from other young cells, but according to Beale, their bioplasm, instead of being converted into the ordinary non-germial matter of albuminous composition, undergoes a fatty conversion, in the course of which it gradually diminishes in size and is thrust toward the wall of the cell, where it may sometimes be demonstrated by staining as a small flattened nucleus. The oil thus produced is termed by Beale, secondary formed material to distinguish it from the albuminous non-germinal matter. The same term is applied by him to the secondary product, starch, found in the shape of concentrically laminated granules in many vegetable cells. According to most other histologists, however, the fatty contents of the fat-vesicles are an infiltration of fat from the blood, superadded to the protoplasm or cell contents, pushing the latter with the nucleus to one side, without substituting it or being derived directly from it, as alleged by Beale.—

Tyson.

Use of the Microscope.

DR. J. A. THACKER:

Dear Sir-It seems necessary for me to say that the object of my article in the May number of your journal, entitled "The Use of the Microscope," was to set forth the importance of due deliberation, including some calm introspection, before purchasing a microscope, so as to be quite sure that the mental condition is of a kind which obviates the danger of disappointment. Finding only one person in eighty using the instrument right, was, I admit, a somewhat ridiculously small proportion; but a point was to be made, and much discount was expected on the part of the reader. It was not my intention to make light of anything so very important to us all as optical investigation, and especially of the application of the laws of optics to the production of that most valuable of all the instruments thus far devised by the ingenuity of man. I was perfectly aware that men of genius must devote their very best energies to the work, if such an instrument is to be improved and thus made more efficient as a help to see. That thinking men interested in the improvement of so important an agent of mental expansion and enrichment should suggest what seems to them new and of use, I did not wish to appear to deny. I had in view a class made up of those who do but little of value, and who do that little along with a great deal which is not only valueless but funny, and I may have wasted ink in dwelling upon the fruitless phase of the labors of such.

That there is a great deal of fooling with the microscope is too true; and such fooling has a tendency to bring the instrument, as it were, into disgrace. To him who really knows, and knows how to value the truly measureless powers of the agent in question, any but an earnest approach to the use of it is peculiarly offensive. Even the exhibition of those powers for other purposes than to excite fruitful thought or entertain the intellect is, or ought to be, disagreeable. It is true, we all have a right

to make such use of our own as we find proper; yet if that use appears trifling or ridiculous to some of us, it may not be wrong for those to whom it thus appears, to laugh a little, orally, or with the pen to try to make others laugh. Yet solemnity is not the proper accompaniment of the use of the microscope. Only considerable preparation in the way of reading and the inquiring use of the naked eye are needed; and these do not involve excessive gravity of mood. To a mind thus equipped, the magical tube becomes a gate to the paradise lying all around, to which the unaided eye is totally blind, and the emotions are what the revelation of so much beauty of form and color—such passingly wonderful adaptation of means to ends would naturally excite.

But this note is to be merely an explanation, and I close it before getting off the switch upon the main track, where

I should not know where to stop.

Very truly yours,

L. R. PEET.

YALLAHA, FLA.

GLEANINGS.

Hamoptysis (The Boston Medical and Surgical Journal, February 14, 1878).- In his report on the recent progress in the treatment of thoracic diseases, Dr. F. J. Knight quotes from the Wiener Med. Presse as follows: Jos. Hirschfeld says that among the therapeutic measures used against hæmoptysis, cold deserves some recognition, as it, by reflex action, produces constriction of the vessels and diminution of their caliber, and so facilitates the formation of thrombi. The internal use of ice is to be preferred to the external application of cold. Any therapeutic procedure against hæmoptysis is essentially aided by deep inspirations (recommended by Niemeyer), provided the hæmoptysis does not come from a cavity. The expansive force of air, breathed in and held in the lungs as long as possible, exercises, evidently, a pressure on the walls of the vessels and on the gaping wound. The forced inhalation of astringents has not answered expectation. Styptics, such as alum, lead, tannin, chloride of iron, etc., taken internally, effect but little, and often disturb digestion. Of the narcotics, digitalis deserves special consideration, as it will show a beneficial, although not a rapid,

action when the heart is excited, and especially when an uncompensated affection of the heart is the cause of the

hæmoptysis.

The sovereign remedy against hæmoptysis is ergotin, which, as is well known, excites the vaso-constrictors. A solution in glycerin (1:10) is better than a solution in water, as after long standing it shows but little sediment, and no fungi. After the injection, the spot injected becomes very sensitive, with some heat, followed by redness, which disappears in eight or ten hours. If the patient is much excited, or has much cough, the author is accustomed to precede the ergotin injection with one of morphia, or to give them both at once, but in different places. In this way, the patient becoming quiet in mind and body, the ergotin has a better chance to act.

QUININE A PHYSIOLOGICAL ANTIDOTE TO THE MALARIAL Poison.—Lond. Pract.: Dr. F. W. Monsel remarks that the most important and ancient of the uses of quinine depends undoubtedly upon its power both as a curative and as a prophylactic agent in malarial diseases, and he proceeds to refer to the different theories that have been advanced in regard to its mode of action. It must, he maintains, be either a chemical or a physiological antidote; in the one case the poison itself being attacked by the remedy, in the other the system, or that part of it which is the seat of election, by the poison being braced up so as to resist its power in whole or in part. He thinks the recurrence of attacks of ague after a paroxysm has been arrested by its administration to be opposed to Binz's view of its action as a paralyzing agent on the malarial poison, and he is inclined himself to admit that it exerts an influence on that part of the nervous system for which the malarial poison has a special affinity, and in virtue of this is more curative than other remedies—as arsenic, caffein, bebeeria, piperine, gentian, capsicum, and strychnia-just as arsenic has a special tonic influence upon the motor nerves in virtue of which it is more powerful in chorea, and caffein an action on the pulmonary veins which renders it more useful in asthma. Hence he believes quinine to act in malarial disease as a stimulant or sedative to the nervous system, especially to that part most implicated in these diseases, and that it is principally in virtue of this action that it proves curative, by

rendering the malarial poison inoperative by an antagonistic action upon the nervous system, and that it proves beneficial in proportion as the nervous disturbance is predominant, and as there is an absence of complications.—

Edinburgh Med. Jour.

Cold Lotions in Tuberculosis.—The use of cold water in the treatment of Phthisis is much preferable according to the author, under the form of lotions than under that of douches, such as are employed by Brehmer and Sokolowski. Here is how Pogacnik directs them to be used: on getting up in the morning the patient himself sponges the entire body with a sponge dipped in water at 10° to 20° Reaumur (54½°—77° Fahr.); he ought afterward to rub himself energetically for five minutes with a large glove and to wrap himself to dry in a linen sheet. He should afterward get into bed for half an hour or an hour, and keep himself well covered until a little perspiration occurs; during this time it is necessary that the movements of the lungs should be reduced to a minimum.

The author has been led to employ this treatment in tuberculosis by reason of the good effects he had obtained from it in engorgements of scrofulous nature. By means of the cold water a regular action of the skin is provoked, and the patient is ultimately strengthened and rendered

less susceptible to atmospheric variations.

Little by little the appetite increases and the forces are

restored, unless the lesions are too advanced.

Hæmoptysis is not a contra-indication and Pogacnik prescribes the lotions even when the douches can not be borne.

The lotions have the advantage over the douches of being more agreeable for the patients; of having a more prolonged and consequently more useful effect; of being very easy of administration, even among the poor, no apparatus being necessary; lastly, and above all, of not necessitating, like the douche, a walking exercise to procure reaction, an exercise which produces fatigue of the pulmonary apparatus.—Rev. des Science Medicale.

LIBERALISM IN HOMEOPATHY.—N. Y. Med. Record: The resolutions recently passed by the Homeopathic Medical Society of the County of New York are a striking indication of the tendencies of the times. They say in effect that the dogma "similia" is no longer capable of universal

application, and that, as honest physicians, the homeopaths are obliged to rely to a greater or less extent upon the practices or methods of the older schools. In other words, they no longer desire to be considered as exclusives. For many years it has been a matter of common notoriety that professing homeopaths have not infrequently availed themselves of the teachings of regular medicine, and applied them in purposely disguised forms. The inconsistency of such a course has undoubtedly led to much of the ill-feeling which we as a school have borne toward them. The present honest declaration-that homeopathy, pure and simple, is not all that their earlier fancies painted it—is simply a public admission that the sectarian position formerly assumed by them is no longer tenable; that duty to their patients requires them to become physicians in the broadest sense, and not blind followers of a creed nor worshipers of a man. That honesty, learning, and ability possess many representatives in their ranks is unquestioned; and we welcome the resolution as a desire upon their part to return to the ranks of a catholic profession, broad enough, as its earlier records show, to embrace and give trial to any views when presented in a spirit of scientific moderation, and when not accompanied by too great demands upon ordinary credulity.

RESUSCITATION OF STILL-BORN CHILDREN.—Nothing especially new has been proposed of late years to effect the establishment of respiration in still-born children. Bruce, in a paper read to the Obstetrical Society of Edinburgh (Obstetrical Journal for February, 1878), relies mainly on artificial respiration, after the failure of the usual methods, as hot and cold water alternately, cold affusions, frictions and slapping. He has not succeeded with positional and mechanical movements as recommended by Sylvester and Hall. He applies artificial respiration by means of a catheter introduced in the larynx, preferring that to the ordinary method of holding the nostrils and blowing into the lungs. Some care is always necessary to avoid injuring the air-cells by too much force. Dr. Dewees used to recommend pressing a few drops of blood from the cord, and we can speak from experience of the efficacy of this process. In the majority of cases, we believe still-born children will breathe spontaneously if left to themselves and kept warm. Some minutes may elapse

before the first feeble gasp, and the inspiratory movements may continue for a long while remote and feeble; but when once instituted, unless by extreme force, they almost invariably continue. An unpleasant moaning nearly always accompanies respiration in these cases, and may continue for hours, but is not of much importance.

MAXIMS OF SUCCESS .- Dr. Jas. Syme gives the following advice, which has been extensively copied: 1. Never look surprised at any thing. 2. Before stating your opinion of a case, upon your second visit, ascertain whether your previous directions have been complied with. 3. Never ask the same question twice. To these the News begs leave to add the following: 4. Better compete with a hundred doctors than with a poor neighborhood. 5. Make it a personal matter to be called a "promising young man." The world wants performers only. 6. Don't talk too much. The owl wins in medicine. 7. Nineteen persons out of twenty employ a doctor to give them physic. Unmixed advice has a doubtful market value, 8. Don't spend your time wondering how your neighbor got his practice. Stick to your own, and it will probably grow. 9. Keep your eve on the man whose talk is always on ethics. 10. Subscribe for the NEWS.

Butylchlofal (until quite recently erroneously termed Croton Chloral).—Its first effect is to produce anæsthesia of the head, the rest of the body retaining its sensibility. This stage is followed by loss of function in the spinal cord, as evidenced by the general cessation of reflex irritability. The respirations and pulse remain unaffected, Still larger doses paralyze the medulla oblongata. Butylchloral, therefore, possesses the property of deeply narcotizing the brain without materially affecting the functions of the rest of the organism. Chloroform and chlorals, on the other hand, cause general anæsthesia concurrently with deep cerebral narcosis, and hence are much more likely to cause injury to the respirations and the heart than the butylchloral. For reasons based upon other experiments and observations it has been recently denied that butylchloral really has these advantages.—Binz.

BLOODLETTING in PUERPERAL CONVULSIONS.—Dr. C. E. Stedman said he had bled in two out of five cases of puerperal convulsions seen last summer, in both of which were head-

ache, a full, hard pulse, and albumen and casts in the urine. Recovery followed in each case. A patient suffering from pneumonia attended with orthopnæa and lividity, seemingly almost moribund, was bled to the extent of sixteen ounces, and expressed relief as soon as the blood began to flow. The next day he was out of danger.—Ibid.

Effect of Strychnia on Vision and Lactation.—Strychnia improves the acuteness of the healthy eye, and somewhat increases its area of vision for blue and red, but not for white. It has been lately shown that strychnia, by increasing the arterial pressure, increases the secretion of the mammary gland in some cases as much as fifteenfold.—Ibid.

MILK DIET IN BRIGHT'S DISEASE.—The Clinic, Nov. 24, quotes from the British Medical Journal, Oct. 25, the following: Dr. Johnson, of King's College Hospital, London, treats most of his cases of Bright's disease by a strictly milk diet; under this plan of treatment, a large number of cases have recovered. In a recent case of acute albuminuria in a young subject, recovery quickly followed the use of a simple milk diet; no solid food being given. Albuminuria, however, returned as soon as he was allowed beef-tea, but disappeared when he was again restricted to milk only; it again returned when fish was allowed, and now, under the use of an exclusive milk diet, the urine is once more free from albumen.—Ibid.

BISMUTH IN THE TREATMENT OF PROLAPSUS OF THE RECTUM AND HEMORRHOIDS.—A case is recorded in La France Medicale, No. S6, p. 682, where a considerable protrusion of the rectum was perfectly cured by means of Bismuth powder used locally. The physician introduced every day into the bowel, after replacing it, a small spoonful of Bismuth (subnitrate?) in a small amount of starch-water. Cure followed in a week. Good results followed similar treatment in cases of prolapse in children, and in hemorrhoids.—Ibid.

It now becomes the duty of the University-of-Michigan authorities to deal vigorously with men who demanded the "thirty dollars" for the return of Devin's body. Prompt expulsion of the students implicated, and the promotion of the janitor to the *inside* of the vat which he cherished so pecuniarily, will be duly appreciated by the profes-

sional as well as the non-professional world.—Louisville Medical News.

To Get Rid of Foreign Bodies in the Throat.—A British naval surgeon, Dr. Beveridge, states that for foreign bodies in the throat, such as pieces of meat, etc., a simple mode of relief is to blow forcibly into the ear. This excites powerful reflex action, during which the foreign body is expelled from the trachea. The plan is so easy of execution, that, if there is anything in it, it ought to be generally known and applied.—Ibid.

The External Use of Tincture of Belladonna in Night-Sweating.—Mr. Nairne writes, in the British Medical Journal of February 2, that for some little time past he has employed the common pharmacopæial tincture of belladonna for sponging the body in cases of phthisical and excessive sweating, and invariably with marked benefit. So far as his experience goes, he has found it much better than anything else; if applied before a sweating comes on, it prevents it; if during the sweating, it almost immediately controls it. Two teaspoonfuls of the tincture mixed with an equal quantity of whisky are quite sufficient (applied with the hand), to cover the whole body and produced the desired effect.—Buffalo Med. & Surg. Jour.

No. 18.

Office Surgeon General, U. S. M. H. S., Washington, November 9th, 1878.

Abstract of Sanitary Reports received during the past week under the National Quarantine Act.

New Orleans.—There were eleven new cases of yellow fever and 143 old cases reported for the week ending yesterday evening. For the past twenty-four hours no new cases and two deaths. Quarantine raised on the 5th inst. Total cases, 13,406; subject to revision, total deaths, 4,010.

Morgan City, La.—There were eight cases of yellow fever and three deaths during the past week. Total cases,

to yesterday evening, 571, deaths, 105.

Mobile, Ala.—During the week ending yesterday evening, there were thirty-five cases of yellow fever and nine deaths. Total cases, 259, deaths, sixty-eight.

Pass Christian, Miss.—Seven new cases of yellow fever and one death for the past week. Total cases, 196; total deaths, twenty-one.

Ocean Springs, Miss.—For the week ending yesterday noon, there were four cases of yellow fever and no deaths.

Total cases, 150, deaths, thirty.

Hernando, Miss.—Ten cases of yellow fever and five deaths, for the week ending November 2d. No cases and one death during the past week. Total cases, 175,

deaths, sixty-nine.

Dry Grove and Lebanon Church Neighborhood, Miss.—Since October 19th, there have been thirteen new cases of yellow fever and eight deaths. No new cases and but one death for the week ending November 6th. Total cases, 125, deaths, fifty-two. Crystal Springs, Mississippi, near Dry Grove, has, so far, escaped the fever.

Memphis, Tenn.—During the past week there were thirty-three deaths from yellow fever. Total deaths to

the evening of the 7th, 2,997.

Chattanooga, Tenn.—Nine new cases of yellow fever and four deaths, during the past week. Total cases to

yesterday evening, 444, deaths, 133.

Cairo, Ill.—During the two weeks ending yesterday, there were eight new cases of yellow fever and three deaths. The last case occurred on the 4th and the last death on the 6th inst. Total cases eighty-three, not including some doubtful cases. Total deaths, forty-four. Heavy frost the 8th inst.

Vicksburg, Miss.—There were eleven deaths from yellow fever during the past week. No deaths during the past twenty-four hours. Six deaths during the week in

the country near Vicksburg.

Delta, La.-Four deaths from yellow fever during the

past week.

Decatur, Ala.—During the week ending last evening there were eight cases of yellow fever and one death.

Total cases, 196, deaths, forty-three.

Gallipolis, Ohio.—No new cases of yellow fever since October 26th. The last death occurred October 27th. Total cases, sixty-five, deaths, thirty-seven; not including six deaths which occurred on the steamboat "John Porter."

Key West, Fia.—No yellow fever since October 13th. The U.S. troops returned to Key West on the 7th inst.

Havana, Cuba.—Twenty-lour deaths from yellow fever

and four from small-pox for the week ending Nov. 2d. Lambayeque, Peru.—For the week ending October 12th, sporadic cases of yellow fever are reported.

Martinique.—There were no deaths from preventable diseases in the island of Martinique during the week end-

ing October 9th.

Bermuda.—During the two weeks ending Oct. 29th, there were six deaths from all causes out of a population of 15,293, including 3,218 military and naval force. The bark "Blackpool," which left Bermuda quarantine for England Oct. 22d, had three or four cases of yellow fever on board.

Japan and China.—Dr. Simmons, Sanitary Inspector for the Japanese Government for the port of Yokohama, reports under date of October 10th, that he regards the occasional reported cases of cholera in Japan during the past summer as cholera morbus, and not malignant, or Asiatic, cholera. On the 2d of October, however, malignant cholera broke out in Nagasaki, and in eight days there had been fifty eight cases and ten deaths. Cholera has existed in Shanghai, China, for several months, and as Nagasaki is the first port of Japan entered by vessels from Shanghai, Dr. Simmons regards the outbreak as a new importation; but owing to the lateness of the season, and the sanitary measures instituted by the Government, he does not anticipate a spread of the disease.

Europe.—In 149 cities and towns of the German Empire, having an aggregate population of 7,369,009, there were, during the week ending October 12th, 5,470 births, and 3,539 deaths from all causes, being an annual death-rate of twenty-five in one thousand of the population. Wiesbaden shows the lowest death-rate—11.2, and Chemitz the highest—33.8. The total deaths include eighty from enteric fever, 127 from scarlet fever and 154 from diphtheria. No deaths occurred from cholera, yellow

fever, small-pox and typhus fever.

Vienna, Austria.—During the two weeks ending October 19th, 700 deaths are reported out of a population of 727,271, being an annual death-rate of 25.53 per thousand of the population. The total deaths include fifteen from small-pox and from enteric fever, eleven from scarlet fever, and forty-six from diphtheria.

Hamburg.—During the two weeks ending October 12th, there were fifty-three deaths from typhus fever,

ten from scarlet fever, and thirty-nine from diphtheria and

croup.

Great Britain.—In twenty-three large cities and towns of the United Kingdom, having an aggregate population of 8,373,953, there were 6,095 births during the week ending October 19th, and 3,371 deaths from all causes. In twenty-one of these cities there were fourteen deaths from small-pox, 184 from scarlet fever, twenty-two from diphtheria, and ninety from fevers, principally enteric.

JNO. W. WOODWORTH, Surgeon General, M. H. S.

BOOK NOTICES.

THE CELL DOCTRINE: Its History and Present State. For the Use of Students in Medicine and Dentistry. Also a Copious Biography of the Subject. By James Tyson, M. D., Professor in the University of Pennsylvania, etc., etc. Second Edition. Revised, Corrected and Improved. Illustrated. 12mo. Pp. 202. Philadelphia: Lindsay & Blakiston. Cincinnati: Alfred Warren.

The object of the author in this little work has been to include in it the views which are now taught, and scattered throughout expensive works. We have, therefore, in separate places, given the views and theories of J. Hughes Bennett, Huxley, Goodsir, Renark, Todd and Bowman, Virchow, Beale, Schwann, Robin, Max Schultze, and many others. To the physiological and pathological microscopist, it will be especially interesting, although not by any means especially designed for them.

In this second edition many of the original sources of the author's information have been re-examined, and from them some additions made and inaccuracies corrected. The section on the *Present State of the Cell Doctrine*, incorporating the author's views, has been entirely re-written, as was necessitated by the very important and numerous contributions to the subject since the first edition

appeared.

A TREATISE ON THE SCIENCE AND PRACTICE OF MIDWIFERY. BY W. S. PLAYFAIR, M. D., F. R. C. P., Professor in King's College, London. With Notes and Additions by Robert P. Harris, M. D. Second American from the Sec-

ond and Revised London Edition. With two plates and 182 illustrations. 8vo. Pp. 639. Philadelphia: Henry C. Lea Cincinnati: Robert Clarke & Co. 1878.

The work of Dr. Playfair upon Midwifery, although not not long before the profession, is regarded as a standar I work. Obstetricians of the highest standing refer to it as an authority. The well known learning and large experience of the author gives it a first position. Although it is not long since the first edition was published, a second is now called for. As a text-book for students, and a book of reference for practitioners, it is invaluable.

The author has endeavored to dwell especially on the practical part of the subject of midwifery, so to make the work a useful guide in this most anxious and responsible branch of the profession. This second edition has undergone such a revision as to make it still more worthy of

being used as a guide.

The plates and illustrations are well executed, and fully answer their design. The paper is good and the type beautiful. The popularity of the work will undoubtedly be still further increased.

A Monograph on the Treatment of Diphtheria, Based upon a New Etiology and Pathology. By William C. Reiter, A. M., M. D. Philadelphia: J. B. Lippincott. This is a small work, in flexible covers, of forty-seven

pages.

In describing the treatment which he is in the habit of instituting, the author states that in over one hundred cases he has treated, he has never seen paralysis nor any other sequel to the disease. He is convinced that the disease is not a poison of the blood, or in the blood, but an excess of fibrin, called, in old times, the inflammatory diathesis. His sheet anchor, therefore, is calomel, which he gives in its purity, exhibiting it with ice water in summer, and cold water in winter. He gives it every hour until the intestinal discharges resemble the fresh water polyps in water troughs, gelatinous, and of a bright dark green hue. He has never seen ptyalism in a single case. The calomel purges, but not excessively, even in children of three or four years, who have taken a half ounce.

Here is one physician who cures all, or nearly all cases of diphtheria, by the heroic administration of calomel; another as positively alleges that he is unprecedentedly suc-

cessful by prescribing drachm doses of muriated tincture of iron every three hours. What are we to think?

The little work will repay perusal.

THE PATHOLOGICAL ANATOMY OF THE EAR. By Herman Schwartze. M. D., Professor in the University of Halle. With the Author's Revisions and Additions, and with the Original Illustrations. Translated by J. Orne Green, A. M., M. D., Aural Surgeon, Boston City Hospital. 8vo, pp. 174. Boston: Houghton, Osgood & Co. Cincinnati: Robert Clarke & Co. 1878.

This work will be received as an important addition to the pathological literature of the ear. It is the only comprehensive work strictly devoted to the pathological anatomy of this organ; and, on account of the opportunities and devotion of the author in this special field, his wellknown thoroughness and strict impartiality in scientific

researches, it will be esteemed most highly.

Diseases of the ear are considered, above all others, the most unsatisfactory in their treatment. While not a few have distinguished themselves for the success they have met with in treating diseases of the eye, of the thorax, of the digestive organs, venereal diseases, etc., we really can not think of any one who has ever attained to eminence for his cures of aural affections. A work, therefore, which gives important information in regard to the pathology of these diseases—for we can have no clear scientific notions of any ailment without first understanding its pathology, the base of all other knowledge—should meet with a welcome greeting.

THE PRINCIPLES AND PRACTICE OF SURGERY. Being a Treatise on Surgical Diseases and Injuries. By D. Hayes Agnew, M. D., LL. D., Professor of Surgery in the University of Pennsylvania. Profusely illustrated. Two volumes. Vol. I. 8vo, pp. 1062. Philadelphia: J. B. Lippincott & Co. Cincinnati: Robert Clarke & Co. 1878.

In the book before us we have the first volume of a work which will surely rank as one of the great works upon surgery in the English language. The language teems with many good text-books upon surgery which have been compiled from various sources, many of them excellent as compilations, but there are but few which are pre-eminent

as setting forth the learning, experience, deep thought and original research of its author. Like generals of an army—there may be many excellent ones in a nation, but the great ones are few. So, as it is easy to compile, we have many very good surgical works, but few great ones—one that may be said from beginning to end to have issued from one mind. For even in the established principles of a science, a great mind makes them its own, as it were, by redemonstrating them, while still further progress is made by establishing new ones.

Prof. D. Hayes Agnew, for a quarter of a century, has been unceasingly occupied with the study of anatomy and surgery, and during the most of that time has been actively engaged as a public instructor, in communicating the great teachings of these closely allied branches in the hospitals of Philadelphia and in the halls of the University of Pennsylvania. The hours of the night have been employed by him, as well as the leisure hours of the day, in writing out the results of his experience and hard study.

We have neither the time nor the space to enter upon an extensive review of this truly very fine work. Those of our readers who are more or less especially interested in surgery will hasten to secure this the first volume, having no doubt from the reputation of Prof. Agnew that it will take rank with the most distinguished works of its class.

Walsh's Physician's Combined Call Book and Tablet. From 18—to 18—. Fourth Edition. Washington, D. C.: Ralph Walsh, M. D., 326 C Street.

This is a Visiting List quite popular, we believe, with many. It is not for any particular year, but its use can be commenced at any time in any month, and used for a year. Facing each blank page for charging visits is a blank page for miscellaneous memoranda. It has blank pages for recording births, deaths, obstetric engagements, etc.

Every physician should carry in his pocket a Visiting List. It will save him very many times its cost. With it he can make his charge on the spot, or give credit. It amply supplies the place of a day book, for at the end of each week or month he can transfer the accounts to a ledger.

THE PHYSICIAN'S VISITING LIST FOR 1879. Twenty-eighth Year of its Publication. Philadelphia: Lindsay & Blakiston.

The Visiting List of Lindsay & Blakiston has been favorably known so very long, that it seems quite unnecessary for us to say anything in commendation of it. It is probably used by more physicians than all the other works of the kind combined.

There are two sizes—one for twenty-five patients a week, the other for fifty. Both sizes, besides the blank leaves for keeping memoranda of visits, have blank leaves for monthly memoranda, addresses of patients and others, accounts asked for, memoranda of wants, obstetric engagements, vaccination engagements, record of births, deaths, general memoranda, etc.

EDITORIAL.

DELAY.—We are unusually late in issuing the November number of the Medical News. This is due to circumstances over which we have had no control, namely, sickness in the family of one of the editors, which recently resulted fatally. For a period of nearly six weeks scarcely any work could be done upon the journal. In finally issuing the November number we labored under many difficulties, and in whatever respect it falls short we hope due allowance will be made.

In the time mentioned our correspondence has gotten somewhat deranged, and we would not be surprised if some letters had gotten mislaid. If any of our correspondents should have had their letters neglected, we hope they will write us again.

We hope that in the future we will have no further em-

barrassments in issuing the NEWS.

CHEAP MICROSCOPES.—We hope our readers will read the advertisements of R. & J. Beck, Bausch & Lomb, and others, in the present number of the Medical News, and send for catalogues. We had intended writing an article on cheap microscopes for this number of our journal, but circumstances prevented. What other writing we have done we have labored under great difficulties. In the near

future we will have something to say on the subject of cheap microscopes. In the meantime, our readers should supply themselves with catalogues for reference.

Substitute for Dover's Powder.—Dr. A. A. Nefe sends us a substitute for Dover's Powder, which he finds to act well. He came across it in some of his researches. It can be used with advantage by those physicians, who, dispensing their own medicines, in consequence of an idiosyncrasy, are attacked by asthma when they inhale the powder of ipecacuanha. Estimating that one grain of morphine is equivalent to six grains of opium, six and one-sixth grains of the preparation are equivalent to a grain of opium. The recipe is as follows:

R. Morphiæ sulph. grs. xx.
Pulv. Camphor.
Cretæ Praep.
Pulv. Glycyrrhizæ.

In what respects it therapeutically differs from the real Dover's Powder can be readily perceived.

HYMENEAL.—There is no use; doctors will yield to the attractions of the fair sex, and get married. Dr. A. A. Nefe, of Morral, Marion County, Ohio, it seems became captivated, and led to the hymeneal altar, June 18, 1878, Miss Flla E. Goorley, of Mr. Gilead, Ohio, Rev. W. S. Eagleson, pastor of the First Presbyterian Church, officiating. Dr. Nefe graduated at the Cincinnati College of Medicine and Surgery at the close of the session '77 and '78, having received the full vote of the Faculty on ballot.

Since writing the above, a friend sends us the following:

"Married--Dr. N. C. Morse, of Eldora, Iowa, to Miss Fannie Wilson, of Covington, Kv.

"Dr. Morse is a graduate of Class" 76 and 777, and although a young man, has already reached a place among the leading surgeons of Iowa. As a student, he was close and careful, and as a practitioner is both an observant and successful man. In marrying Miss Wilson, he marries one of Kentucky's most accomplished ladies and a true woman. We sincerely hope that their life together may be full of happiness as well as usefulness, and may their greatest hopes be fully realized, is the wish of their many friends."

THE

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PRIGINAL CONTRIBUTIONS.

Some General Considerations on Headaches.

BY E. A. COLBLEIGH, M. D., ATHENS, TENNESSEE.

VERY few symptoms of morbid action come before the medical practitioner more frequently, or cause more annoyance to both physician and patient, than headache. An accompaniment of the vast majority of all acute constitutional affections, complicating many chronic ailments, and often presenting itself as the only unpleasant derangement, it necessarily assumes many forms and meets us every And, though one of the commonest of common causes of complaint among our patrons, it is universally admitted to belong in the list of maladies which our science has not yet fully investigated, nor our art conquered. Even to-day, in the boasted enlightenment of this progressive nineteenth century, cephalalgia continues to perplex us as a profession, baffling our skill, shaking our confidence in the resources of our armamentarium medicinæ (and our patients' confidence in us), throwing reproach on the "healing art divine," and opprobrium on our pathological knowledge, clinical opportunities, and therapeutical power.

Is there not, then, motive for progression toward a better understanding of, and a more successful contest with this, hydra-headed cause of human suffering? Is it not a subject worthy of more attention on our part, and one not likely to be too much discussed? Everywhere, and in all ages, not only the world generally, but hundreds from our own ranks, have felt the pain which this

neurosis entails on its victims, and we have not lacked for incentives, both selfish and philanthropic, to push our investigations and experiments until methods of treatment are discovered which will enable us to give prompt relief to more sufferers than we do now. And the indications are, that we are slowly but surely gaining ground in this direction.

Probably no class of physicians are better fitted to investigate headaches, than those who have personally experienced them. Of these unfortunates, I am one. Receiving, from a line of ancestors who suffered thus, that neurotic dyscrasia, which entails headache upon it possessor, I have felt in my own person, at different times, almost every kind of cephalic pain pertaining thereto. Entering upon a medical career, I naturally paid much attention to analyzing my own and my patients' attacks of cephalalgia, forming and re-forming opinions, and experimenting in etiology and therapeutics, both in idiopathic and symptomatic cases of every grade, from the most trivial ache to the highest inflammatory anguish. Wherefore, feeling it to be the duty of every physician to contribute his mite to the common store of our professional information. I offer the present observations with the fear that, in much chaff, but little valuable grains will appear. Nor do I claim originality in the views which may be here set forth, for they have been formed by degrees, so that I scarcely know when or how I got the several ideas going to make up the whole fabric. Possibly nothing, herein presented, may be in the least new. For aught I know to the contrary, I have borrowed every opinion from previous medical writers. But 'tis a subject which involves enough importance to the doctor to merit, with him, the motto of our great advertisers, "keep it before the public," and I can, at least, confirm the assertions of former observers, if I fail to accomplish any other result.

All pain arises from nervous irritability, be that irritability produced as it may. In the healthy condition of the nerve centers and trunk there can be no pain. All headaches are therefore headaches from irritation. But irritation may ensue from the effect of many causes, according to the location of their application, the manner, and the possibility of a part receiving numerous impressions. The brain, protected in a firm bony case, is so shielded from ordinary external interference, that comparatively few

irritants can disturb it, except such as are transmitted to it by the organs of sensation or the circulatory system. Wherefore, the classfication of cephalalgias narrows itself down to small limits.

We may divide headaches into four varieties, according to the cause that produces them. 1st. Those of hyperæmia, either active or passive congestion, including not only plethora of the arteries and arterioles, but venous and capillary engorgement. 2d. Those of anæmia, limiting the term strictly to cases where a positive deficiency of the blood occurs in the cephalic region. 3d. Those of toxæmia, in which the blood is deficient in nutritive elements, contains them in such excess as to cause morbid manifestations, or is charged with some unnatural constituent, that, to a variable extent, impairs its integrity, and renders it unfit for the purposes it normally accomplishes. 4th. Those of pure nervous disturbance, dependent on no known or demonstrable pathological change in the painful part. The division of some writers is simply into idiopathic and symptomatic—a convenient usage, and I shall speak of these divisions-but it is only for convenience, and because our present knowledge does not go far enough, that this classification is admissible. That all headaches are really but symptoms, not diseases per se, no well informed pathologists will deny; but, thus far, we have failed to ferret out the minute microscopical or chemical changes which are the probable true causes of the pain in many cases, and which improvements in our means of research will perhaps enable us to master in due course of time; and, on this account, we are now forced to call idiopathic such cephalalgias as we can not trace to their obvious sources. As comparatively few of these headaches tend to cause death, the lack of opportunities to make post-mortem examinations necessarily retards progress in this direction, and leaves room for free speculation and hypothetical reasoning.

As the types of headache vary, so may the location and character of the pain. It sometimes follows the course of a single nerve and its subdivisions. Now you meet a case where it is evident that the hyperæsthesia is superficial or extra cranial, and again it seems undoubtedly within the bony casing. One person has it limited to half the head, a second to the orbital or supraorbital region, a third to the vertex, and a fourth complains of his entire

cranium. In some of these cases, especially the latter, there seems no room to doubt that the cerebral room itself, or the sensory filaments of its meningeal covering, are the sole seat of suffering. So, too, one complains of a sharp, lacinating pain; another, of a dull, grumbling ache; still, another, of a heavy, throbbing distress.

Now as to the several types. The cephalic pain of cerebritis falls outside of the intended scope of my paper. So do most of the various of the symptomatic headaches depending on extra-cranial disturbances, except as I may incidentally allude to them in passing. Wherefore I come at once to the consideration of the so-called idiopathic

headaches, as classified hereinbefore.

The congestive form, and I use that term in its broadest sense, probably includes a majority of all non-symptomatic and non-sympathetic headaches. The progress of pathological researches is altogether likely to demonstrate that a large proportion of those cases, which I shall class in the purely neural list, really have their origin in blood changes of quality or quantity, or both combined. That many such trivial and temporary disturbances do occur, which show no post-mortem evidences of their existence, either from a lack of our opportunities or abilities, to see and recognize them, is a matter of but little doubt. And I strongly incline to the opinion that hyperæmia of the nerve-centers, trunks or peripheries, will some day figure largely in the acknowledged causation of our present so-called neuralgic affections. My belief is that all, or nearly all, of the congestive cephalalgias begin insidiously, oftentimes without obvious disturbances of function or sensation, by capillary plethora, some giving rise to pain, sooner or later, without passing beyond this point, others proceeding to hyperæmia of the larger trunks. The resultant pain may arise in either, or both, of two wavs-1st. By irritability generated through the excessive stimulus of an abnormal abundance of blood, either passing too rapidly through, or stagnating in the brain and its coverings; 2d. By pressure on the nerve-tissue at center or periphery, from undue vascular (and perhaps also cell) distension.

I shall not stop to discuss the question how the brain, in its unyielding cavity, can become positively congested. No one denies the possibility of relative congestion there; i. e., a disproportion in the relative quantity of its several

fluid contents. That the weight of testimony is in favor of positive congestion; also, that the elasticity of its tissue is favorable to such condition, and that the evidences met in practice bear out to the satisfaction of most observers, not only a possibility, but a real occurrence of this state, I take for granted.

To this group of cerebral pain belong all the inflammatory headaches, a portion of those sympathetically resultant from distant disturbances (such as cardiac hypertrophy, hepatic congestion, etc.), some of the cephalalgias of the various fevers, and a large proportion, if not a majority, of those strictly denominated idiopathic. Aside from such as depend on inflammation or irremediable mechanical conditions, the intrinsic tendency of this class is toward spontaneous recovery, usually in a shorter time than those dependent on the opposite condition of anæmia. And this result is readily understood, because, instead of there being any lack of nutritive material, there is an excess, the integrity of the cerebrum remains unimpaired. its controlling power heightens instead of diminishing, and, sooner or later, this power overcomes the deranged action. Like all rules, there may be exceptions to this one, yet the inveterate cases are largely in a minority, and the rule holds as such.

By anæmic headache I do not mean one dependent on impoverished blood. Such is often the rendering of the term as commonly applied; but, strictly, the definition of this condition would require the word spæmia or cachæmia to express it, and thus fall in the third group of my present classification. In the class now under consideration, we must rank only such cephalalgias as depend on positive lack of the circulating fluid in quantity, excluding even those of mere stasis. Here we have mostly mechanical action as productive of the affection. Thrombosis, embolism, cardiac inactivity, either functional or organic, aneurism, tumors, etc., are the main agents operative in the causing of these headaches. And, as will be seen at a glance, they are less frequently met with, as well as less easily cured or relieved, than the first class considered. They are always sympathetic, frequently very protracted, and often the only symptom complained of, so that it is decidedly important, and difficult in many cases, to trace them to their true source. Some of the headaches of fevers are, to a certain extent, of this kind, and also

those of other constitutional diseases; but seldom is such the case unless the toxemic or neurotic types are more or less mixed with this variety. Syncope and distant severe irritations, on the principle of revulsion, often produce, in whole or in part, pain belonging to the anemic

group.

Of course, under these circumstances, we find the brain to a greater or less extent starving. Its nourishment is cut off, the source of its power fails it, and the power itself becomes impaired or lost. In the latter case death ensues. In the former, the great controlling organ of the body is inadequate to right the mischief going on, and the tendency is to pathological progression, to structural change. As the progress is thus apt to be toward a worse and worse condition of things, so is the prognosis proportionately bad, and the treatment unlikely to accomplish its desired results. Specific remedies addressed to the cephalalgia can accomplish nothing in a curative sense. Only the removal of its cause can permanently stop the pain, and this is too often beyond our power.

Both of the foregoing types of headache may occur as local pains, or may involve the whole region of the cerebrum. Each is more or less accompanied by disorder of sensation, or intellection, or both combined. Pain at one point may arise from anæmia, while hyperæmic suffering exists elsewhere in the head. And, finally, in cerebritis, as well as some other cases, one kind may precede the other; local anæmia often supervening on the plastic depositions of hyperæmia, and congestion or inflammation following the reaction after temporary anæmic states.

My third division is that of toxæmia. Here I would include all blood changes of quality, aside from quantity, which tend to produce vital disturbance amounting to pain. My object, in classification, is to arrange the types, not from any difference of symptomatic manifestations—because many of these obtain alike in all the varieties of headache—but from causative differences, that a rational method of treatment may be reached. And we know that even such hæmal alterations, as are strictly physiological within certain limits, become, when they transgress those limits, pathogenetic in character. Wherefore even the normal elements of the blood, if either, or any of them, be in too great excess, may produce irritation, pain, and often structural disease. If, then, these changes act in

an injurious manner, how much more would some foreign, though perhaps (with our present analytical capabilities) inappreciable element, finding its way in the circulating fluid, and traversing the system, disturb the balance of cell elements, vital action, or nervous force, and produce various ill consequences. Such being the case, the class of toxemic headaches is not only a strictly legitimate one, but it is also one comprehensive in its grouping, important practically, often difficult to understand, and not less difficult to successfully treat.

We believe, as previously stated, that all cephalalgias are in fact but symptoms. Such is particularly the case in toxemic varieties; and yet, as the cephalic pain is often the first and only manifestation of this state, many of them would properly be placed in the generally received catalogue of idiopathic complaints; and too often the measures of relief would be addressed solely to the pain,

without attacking the seat of actual disease.

As examples of the known agents which act through the vital fluid and give rise to headache, I may cite alcohol, quinia, tobacco, arsenic, mercury, coffee, strychnia, and the various narcotic drugs which have been demonstrated to act in this way. To this list could be added urea, and several other materies morbi capable of production within the body, and only causing detriment from lack of proper elimination. Nor can I restrict the term toxemia to the mere presence of abnormal constituents in the blood. I extend it so as to include those cases where the absence of certain natural elements brings suffering on the system, as in actual deficiency of red globules, albumen, fibrine, the several salts, and other chemical components of that fluid in its integrity.

From these statements it will be observed that toxemia headaches can but be numerous. They also vary much in regard to their duration (when uninterfered with) and intensity, according to the amount of the poison acting, the ease with which the various emunctories eliminate it, the extent to which the brain becomes accustomed to its presence, or the time comes when its introduction into

the vessels ceases.

To toxemia may plausibly be attributed, in whole or in part, the cephalalgia of intoxication, chloroform, and ether, some of the specific and adynamic fevers, respiratory disturbances, cardiac irregularities, syphilis, pyæmia, true gout and rheumatism, malaria, cholesteræmia, many zymotic affections, gangrene, erysipelas, etc., etc. Doubtless some of the forms of dyspeptic headache, and perhaps also the headache of constipation, which is sometimes so annoying and intractable, may partly be accounted for by regarding them as more or less belonging to this class. Some writers consider all idiopathic cephalalgias as arising from toxæmia. But such a doctrine is too comprehensive for accuracy, though it is a fine one for ignorance, carelessness, and sloth to hide themselves behind. 'Tis hardly rational to conceive that a parent could transmit to his offspring nothing more than a poisoned blood, constantly in motion and subject to daily changes, which should, year after year through life, cause periodical headache, with long intermissions between the paroxysms, and yet that identical pathogenetic fluid be circulating every moment through the whole system of that same son or daughter. When we adopt a theory, which is based on solid facts, enough for its adoption to be rational, let us by all means hold to it rationally, and not bring it into contempt by abusing it, or trying to stretch its little truth into the vast fabric of hypothesis in order to make it cover more unexplored territory.

Lastly, we reach the consideration of my fourth class—the neurotic group. It is one which, at the present time, is forced by custom, to father a larger progeny of aches and pains about the head, than either of the other three. My own opinion is, that far too many painful conditions are hastily dismissed in general practice under the convenient diagnosis of neuralgia. I lean strongly toward the belief that the time will come when neuralgias will "grow beautifully less," in our nomenclature and therapeutics. I opine that, though forced now to adopt this last class of headaches into my plan of arrangement, it is only my ignorance that prevents its banishment, and the narrowing down of headaches either into three classes, or the substitution of some new group, based on increased en-

lightenment, for my present "neurotic,"

But, though we may not rest content under things which we can not improve, yet we are forced, often, to accept the situation, just as we find it, and make the best of its evils. So I will define neurotic headaches—as the term is used in this paper—to be all such as can not be shown to belong in one of the other divisions. The word—like

neuralgia—conveying no depth of meaning, admits of my using it for the purpose of affording an orphan asylum for the bastard headaches which can not be fathered by either of the three preceding and respectable family heads. And, as human bastards are numerous, and often attain much importance, so this class of pathological illegitimates is large and consequential. Here we find many cephalalgias which afford no evidence of any vascular, or other disturbance, save the pain. Yet there is no doubt in my mind that a goodly number are caused by hæmal disorder, because some of them yield promptly to remedies which restore the blood and vascular system to its natural state. And we certainly know that often, when simple pain seems to exist at the start, or does really exist alone, hyperæmia, anæmia, etc., follow in due course of time. Apparently these headaches depend on nothing more that a heightened sensibility in the nerve tissue of center or trunks. And perhaps this is the true explanation beyond which we may never be able to go. At any rate, the only view we can take of the matter now, is to resolve these cases into hypersthenic and asthenic conditions of nerve-force. In one, there lacks the usual equanimity of the nerve-system, because its force is below par, or unbalanced, resulting in irritability, which may proceed to the extent of inducing pain. In the other, the force is positively above par, leading to a like irritability and suffering. In neither of these divisions do I include the cases where these nervous states arise from blood stimulus or insufficiency, as both may do, but limit my remarks to cases where the disturbance seems to come from inherent capabilities, or lack of capabilities of the tissue itself.

At times there appears to be a certain withdrawal of cerebral control from the system at large, and a concentration of the major part of its power in the cerebrum, or its immediate neighborhood. Many times this seems centered in the mind, and that is quickened, so that thought has free and rapid play, but no pain occurs. Again, the special sensory centers are the objects on which this electric current expends itself, causing unusual acuity of said centers, or positive perversions of sight and hearing, according to the intensity of the force operating. Finally, either with or without one of the foregoing conditions, pain of every grade arises seemingly attributable to no other cause than pure neural irritability. In other cases, disturbances in

distant parts of the body appear to telegraph to headquarters the fact of their existence, and call for the brain to assert its controlling influence and dispel them. The great nerve-center attempts to rectify the local wrong, puts forth a heightened exertion, and finds its power inadequate for that purpose. This force reacts, and the cerebrum becomes itself disturbed beyond the physiological limits, pain ensues, and headache is inaugurated.

In these several ways are the cephalalgias of this group generally accounted for. This is the popular proximal etiology of the suffering. It may be good philosophy,

and it may not. I accept it for want of a better.

Reasoning this way, many of the headaches of fevers belong in the present class. It comprises a large group of sympathetic, and not a few idiopathic cases. The head pains from trivial injuries, from shock in some instances, from the play of the emotions and passions, from dentition, from excessive pain in distant organs—intestinal spasms and other irritations, hysteria, constipation, indigestion, epilepsy, and the long list of neuroses, are catalogued here

as their legitimate place, either wholly or in part.

If my classification be founded, as I believe it to be, on the true pathology of to-day, then it behooves us, when we court success, to fully recognize the divisions. They put us where we acknowledge the necessity of being on the alert to trace these pains back to their proximal causes, and treat them accordingly. Patience and perseverance are requisite. And we find ourselves bound to discard all lauded specific therapeutical measures based on any other plan, and rationally apply appropriate medication. as the several indications suggest, or experience shows effective. Nor can we become wholly absorbed in the positivism of either one course, as succeeding with a single group of these cases, to the exclusion of the other three. If we accept one we must at least for a time carry all, and, doing this, we may expect better success than the convictions of both the people and profession (as drawn from past experience and shown by the hundreds of sufferers from headache who have lost patience and "thrown physic to the dogs") would lead us to anticipate. So, too, we must not only, when possible, learn to discrim inate the several varieties from another, but we must also bear in mind that 'tis not alone a possibility, but an actuality, that in many cases these types exist together,

so blended as to be difficult, yet deserving, of careful

diagnosis.

In a future paper or papers I hope to carry this subject further, and enter fully into the matters of predisposition, heredity, excitation and therapeusis, as based on the tenets set forth in this communication.

Annual Address Delivered Before the American Academy of Medicine.

At Easton, Pa., Sept. 17,1878, by Frank H. Hamilton, A. M., M. D., LL. D., President of the Academy, Surgeon to Bellevue Hospital, New York.

We hope our readers will give this address of Prof. Hamilton an attentive perusal. We regret that its length precludes our publishing it in full in this number of the News; but on the reception of the following number they can commence again with the present number and read it all the way through. The present portion will bear reading over again. In previous numbers of the News we have spoken of the American Academy of Medicine.

—Editor News.

Gentlemen—Fellows of the Academy: It was not my privilege to have been one of the founders of this society, but I was honored with membership at so early a period of its existence, as to have participated somewhat in the deliberations which were to control its permanent organization, and shape its future policy. I may be permitted, therefore to speak on this occasion—our annual meeting—of what I consider to be its purposes, functions, and destiny.

The purposes or objects of this association are thus broadly stated in the second article of our constitution:

"First.—To bring those who are alumni of classical, scientific and medical schools into closer relations with each other.

"Second.—To encourage young men to pursue regular courses of study in classical or scientific institutions, be-

fore entering upon the study of medicine.

"Third.—To extend the bounds of medical science, to elevate the profession, to relieve human suffering, and to prevent disease."

The founders of this society sought, especially, by its organization, to aid others who are engaged in similar efforts in this country, but who are working by other means, to remedy a great, and universally admitted evil, namely, imperfect preparation for the study of medicine, and its almost inevitable sequence, imperfect qualification on the part of those who are admitted to practice.

NATURE AND EXTENT OF THE EVIL.

It is pertinent to inquire into the exact nature and extent of this evil, its causes and consequences; and also to consider whether our organization is likely to aid those who, in common with ourselves, are searching for a

remedy.

For many of the facts which I shall present I am indebted to the statistical labors of Dr. Pepper, of Philadelphia, and to the similar labors of Dr. Green, my distinguished predecessor, both of whom have occupied themselves in a careful study and record of the construction of medical colleges, of the character of licensing boards, the rules governing matriculation, the periods of study, and the qualifications of graduation, both at home and abroad.

Additional information upon the subject of medical education, in this country especially, may be obtained from the reports of commissioners of education at Washington, and from the address of Dr. Sibbet, the originator and founder of this association.

REQUIREMENTS OF FOREIGN SCHOOLS.

From these reliable sources of information, and from others which have been consulted, I may state that a thorough preliminary education, generally equal or superior to the acquirements demanded for the degree of A. B., in the colleges of arts and sciences in this country, is the absolute condition for matriculation as a student of medicine, in Germany, Austria, Russia, Sweden, Norway, Denmark, France, Holland, Belgium, Italy, Portugal, Chili, Venezuela, and Spain,

In all the countries named, also, the curriculum of study is carefully graded, the advance from one grade to another being only after a thorough examination; and the shortest time of pupilage is four years, nine months of each year being given to college and hospital instruction.

In some of the States named, the term of study is extended to seven years. All of the professors, so far as I have learned, are salaried, and in no manner dependent upon the students for their pay. The final examinations for licenses to practice are made by independent boards.

Great Britain, with its colonial dependencies, Canada and Australia, has always been less exacting. The preliminary requirements for matriculation are lower. The courses of study in the colleges and hospitals are shorter; they are not so systematically graded; fewer examinations for promotion are required, and the professors depend upon the students for their compensation. Government determines the number and location of the colleges, but provides no salaries for the teachers.

Within the last year or two the English system has undergone some improvement, but the statements above

made apply to its present condition.

REQUIREMENTS OF THIS COUNTRY.

The laws regulating medical education in this country, and the practice of medical colleges and of other authorized licensing boards, have been of late years so much discussed in our medical societies and journals, that the sub-

ject must be painfully familiar to you all.

With four or five exceptions, licensing boards in this country, including medical colleges, demand no certificate of preliminary education, nor do they demand any preliminary examination. The courses of instruction are not graded; there are no examinations in course for promotion. The term of study required never exceeds three years; the actual time of attendance upon college instruction required never exceeds ten months for the whole period of three years, and generally not more than eight months, and in some cases still less. The examinations for license, and for the degree of M. D., are made by the professors themselves, or by the professors, aided by a board appointed by themselves, and who seldom or never take any active part in the examinations. The professors receive no salaries, but are dependent wholly upon the size of their classes for their remuneration.

In the four or five exceptional cases, there has been within a few years an attempt made to improve the plan of instruction by demanding, in some cases, certain preliminary qualifications, by grading the studies, and in one case by rendering the professors wholly independent of the pupils, by fixed salaries from permanent or transient endowments; but in neither of these cases have the reforms been such, either in character or degree, as to bring the standard of education to a point anywhere near that of foreign schools.

PROPORTION OF PHYSICIANS TO THE POPULATION ABROAD AND AT HOME.

The German empire has a population of 41,060,695, with 13,686 physicians. Germany has therefore about one physician to every 3,000 of its population. About 550 are licensed annually, of whom probably one hundred emigrate to other countries, leaving about 450, perhaps not more than 400, as the actual annual supply. Yet it has never been intimated that Germany suffers for want of

physicians.

The population of the United States is 44.874.814, with 62.383 physicians, according to the census of 1870. Dr. Pepper estimates that there were in 1877 at least 60.000; but Dr. Sibbet raises the estimate to 80,000. We have therefore, it is safe to say, one physician to every 600 of the population. The colleges license about 3,000 annually. According to the report of the Commissioner of Education above referred to, there were 3,177 degrees conferred in course during the preceding year; this enumeration including colleges of dentistry and pharmacy.

Lest it might be supposed that this large proportion of physicians to the population was rendered necessary by the sparseness of the population in certain portions of the United States, we will state that New York State has 6,810 physicians, or one to every 642 of the people; and the District of Columbia, our seat of government, has one

physician to every 404 of the population.

I have compared our condition with that of Germany, only because the population of the two countries is so nearly the same, that the difference can be easily carried in the mind. The contrast between our supply of doctors, and the supply existing in some other civilized countries, is much greater than in the case of the comparison I have just instituted. For example, Sweden has but one physic an to every 7,000 of the population; Venezuela and Chili have one to 9,000, and Brazil has one to 10,000.

Here then is a department of industry in which we have

led the world, namely, in the manufacture of doctors. It is a somewhat remarkable fact, however, that notwithstanding the enormous, and what might seem excessive production, and which is increasing at the rate of about 3,000 a year, there does not appear to have been created any foreign demand for the article. On the contrary, by most governments its introduction and use are forbidden, on the ground that our certificates as to the quality of the fabric are not reliable. Some specimens are admitted to be good, but others, with the same indorsements, are known to be very bad; and foreign governments choose to reject the whole, rather than to subject each to a special examination.*

It will perhaps interest those young men who are pursuing the study of letters in this college, and who contemplate entering upon the study and practice of medicine, to know that it has been lately estimated that nearly onehalf the population in this country receive their medical services gratuitously; so that the proportion of physicians to the paying population is about one to every three hundred. In this sense, at least, ours is a "liberal" profession

-the most so of all other professions or callings.

SOURCES OF THE EVIL.

In searching for the sources of the great evil of which we complain, I think we must go a long way back. Our present system of medical education is an inheritance from Great Britain. Our medical colleges were founded and organized upon the model of the British Schools, which probably was not the best system at the time of its adoption by us, and certainly is not now.

This system, the distinctive features of which I shall presently describe, has caused in Great Britain a depreciation in the standard of medical education; or, to say the least, it has prevented the advance of medical education in an equal proportion to the advance of medical science, and has allowed her schools to fall in the rear of other

European Schools.

The medical men and the statesmen of Great Britain clearly understand and publicly declare, that many of their licentiates have very imperfect qualifications. It is

^{*}The Commissioner of Education states that from ninety-nine Medical Colleges, including Pharmacists and Dentists and the irregular colleges, there were for the year 1874, 9 095 students reported, and that of these, only 733 are shown to have received a degree in Letters or in Science.

with them a constant subject of complaint and deprecation, and has led to much discussion and many suggestions as to the proper remedy. Great improvements have lately been made, but it does not appear to me that they have yet discovered or reached the main source of the difficulty; and I confidently predict that the increased rigor recently observed in the preliminary and final examinations will prove to be temporary, and that all the numerous licensing bodies of Great Britain—including even the Archbishop of Canterbury himself, who is by ancient right authorized to grant licenses to practice medicine—will soon relax into their former inefficiency.

Dr. Apjohn, speaking of the General Medical Council of Great Britain, said, recently: "Some years ago the practice of conferring full medical degrees upon students who had no education in arts was exceedingly prevalent. It was a scandalous practice."—Dr. Green's Address. (From

Med. Times and Gazette, 1877.)

Dr. Farr said. "It has become a matter of public concern that it is difficult to supply the vacancies in the army medical staff with competent practitioners."—Ibid, 1877.

Sir Wm. Gull, addressing the same body, said: "I believe that up to the present time the preliminary examinations have been conducted, very generally, by the Medical Faculty, and that is what we want to get rid of. We want to establish that preliminary examinations should be conducted by persons whose minds are directed purely to education, apart from what is technical."—Ibid.

"* * * Up to this time, I may say, that the preliminary education examination has been good for nothing as a means of selecting men for entering the profession."—

Ibid.

THE FUNDAMENTAL DEFECT OF THE ENGLISH AND AMERICAN SYSTEM.

Let me now explain what seems to be the fundamental and fatal defect in the English and American system, and that which is the direct and inevitable source of all the other defects.

In all the European countries, and, so far as I can learn, in all civilized countries, except in Great Britain, with its dependencies, and the United States—that is to say, in all except the English-speaking nations—the professors are endowed; thus rendering the pay of the professors or teachers independent of the fees received from the medical students.

The plan or system of support, or of dependence upon the tuition fees alone for the support of the professors and which necessarily demands that the conditions of admission and of licensing shall rest mainly, if not exclusively, with the professors—has worked badly in Great Britain, and in all her colonies, including the United States; but it has worked worse in this country since we became independent of Great Britain. While we remained a colony, so early as the year 1765, the medical department of the University of Pennsylvania was organized at Philadelphia without endowment; but at first no student was admitted to matriculation without a thorough preliminary education. Only one other medical college, the medical department of King's College, New York, was established in this country until after the Declaration of Independence; and from that time all the medical colleges, except the University of Pennsylvania, omitted to recognize the importance of preliminary education; and in 1811 this condition was formally abolished at the University of Pennsylvania. Several new medical colleges had been established, not one of which demanded preliminary education; and the competition had become so sharp, that an abatement of the requirements for admission had to be made, or the college at Philadelphia would have lost its position as the leading school.

In Great Britain the number of colleges was, and still continues to be, limited by the general government; and so, also, in the English colonies; but when these colonies became independent, each State claimed the right to do its own teaching, and most of the States were not slow to exercise their right. The trade was free; and so the new industry sprang up, and has attained its present vast proportions. We had in 1876, seventy-eight medical colleges empowered to grant licenses to practice medicine and surgery, namely, sixty-three Regular, eleven Homeopathic and four Eclectic. This does not include colleges of Pharmacy and of Dentistry, although it is well understood that both Pharmacists and Dentists more or less encroach upon the practice of both medicine and surgery in this country. Nor is any account made of other licensing boards in no way connected with the colleges, which exist in

some of the States.

If you attach any value to the opinions of the world upon our system of medical education, you will listen to what was said in the Gazette Hebdomadaire for Jan. 12, 1877, quoted by Dr. Green in his annual address, "The number of quacks in England is considerable, but it is much greater in the United States. Medical education in the United States is more than defective—it is bad."

REMEDY

To those born and educated abroad, and who have no acquaintance with the machinery of our government, and with the character of our people, the problem before us, no doubt, may appear to be of easy solution. It is only to copy their example. There are many medical men, also, born and educated in this country, but who have had no practical experience in the business of teaching and of licensing, who believe the remedy could be easily found. They have from time to time suggested various and dissimilar remedies, some of which they have been permitted to see tried; but notwithstanding all their efforts they are compelled to make the humiliating admission that the reforms have not come.

THE FEDERAL GOVERNMENT.

The general policy of our government is opposed to centralization; and the powers of Congress have been limited to those matters in which a central control was deemed more essential or absolutely necessary. In matters of education, through the Bureau of Education, it exercises a surveillance. It collects, arranges and distributes statistical information; but it seldom ventures even to recommend, much less does it attempt, or has it authority to control—education.

The Federal Government has, therefore, never attempted to regulate medical education in this country, nor is it probable that it will ever do so. To those who will take the trouble to read the discussion both in and out of Congress, pending the establishment of the Bureau of Education at Washington, only six years ago, the evidence will be conclusive, that the Federal Government will not be permitted at present, and perhaps at no time in the future, to assume the management and control of education. The States claim this as among their many reserved rights, and they are not likely soon to relinquish it.

We have also a Bureau of Agriculture; but like the Bureau of Education its functions are merely to collect

and diffuse information.

THE STATE GOVERNMENTS.

Our Union consists at present of thirty-eight States and ten Territories, including the District of Columbia. Thirteen of these States are as old as the foundation of the government. The remainder have been added from time to time; and certain territorial districts are now waiting for admission. The process of our construction is, therefore, still incomplete. All of our territory is not yet formed into States, for the reason that, excepting the District of Columbia, these Territories have not yet the required population to entitle them to a State organization. As Territories they are under the exclusive control of the general government, but as soon as they attain the rank and title of States, they become, in a great measure, independent of the general government.

Each one of these States has, we repeat, full control of its own educational interests; and they have seldom failed to exercise their authority in one way or another, but scarcely any two in precisely the same way. Some have recognized the right of all those who choose to practice medicine, and to collect their fees as for any other labor or service; other States have limited the right to practice to

certain conditions, more or less severe.

As to the value of all that has hitherto been done by State legislation, a correct opinion may be formed by referring to the facts already given. State legislators have seldom sufficient knowledge of or interest in the subject, to establish and maintain a proper system of medical education. But it is only due to our legislators to say, that in most, if not all cases, the system actually established is all, or nearly all, that the profession and the colleges have asked for. I have never heard of an instance in which the State has been asked, formally, to establish a grade of medical qualification equal to, or in any measure approaching that adopted in most other countries. It is not improbable that in some instances it would have been done, if the request had been made seriously. The reason why it has not been demanded by colleges and the profession is, I presume, that if such a system were adopted, unless the colleges were fully endowed at the same time, the schools would be deserted; inasmuch as students could get their licenses to practice much sooner and with much less cost in other States. A license to practice in one State is not

necessarily a license to practice in another, but owing to the close proximity and free intercourse between the States, it has never been found possible to prevent wholly the licentiates of one State from practicing in another.

Occasionally the State has appropriated small sums of money to medical colleges; and in one instance the State appropriations, aided by the use of government lands and funds proved sufficient to endow partially the college and its professorships; and then arose a new subject of difficulty. The State claimed the right to establish professorships in all the various forms of medical dogmas, and this right it has exercised, to the great mortification of the original medical faculty, and to the great detriment of the college.

The experience of this college—the medical department of the University of Michigan—stands now as a grave warning to other medical colleges; and most of them would to-day hesitate to put themselves under the power of the State, preferring to lose the endowment, rather than to submit to the humiliation and disgrace of being associated with empirics in the education of medical stu-

dents.

So far as dependence upon the State legislatures is concerned, then, we may conclude, they will do nothing for us in the future that they have not done in the past. They are not likely to endow our colleges, and if they do they will pretty certainly accomplish their ruin, in at least

so far as sound and useful teaching is concerned.

For us, the union of Medicine and State is quite as much to be dreaded as the union of Church and State. We believe it would retard, rather than advance, the true interests of either. We speak for ourselves in this matter, and not for other governments. Our knowledge of our own peculiar institutions, our experience as to their workings, and especially the late experience of the college at Ann Arbor, convinces us that we are right in this matter, and that nothing is to be expected from State endowments, and very little from any State legislation.

(TO BE CONTINUED.)

Maltine.

SOME OF ITS ADVANTAGES OVER THE MALT EXTRACTS OF BARLEY AS A REMEDIAL AGENT.

BY WILLIAM A. GREENE, M. D., MACON, GA.

THE discovery of malt extract, by Baron Liebig, was always regarded by himself as one of his most valuable contributions to therapeutics, which has been fully confirmed by the medical profession throughout the world, in the results obtained, and increased demand for the medicine.

The unexampled popularity, in this country, of the preparations of malt extracts, must warn us of the great dangers that exist of adulterations and other impurities and defects that will creep into its manufacture—as already we find the market flooded with unreasonable preparations, all claiming superior advantages—hence the great caution and judgment required by practicing physicians

in selecting the best article for administration.

It is only by careful observation and experiment, fully sifting all the facts and evidence presented, and noting particularly the sources from which they emanate, that we can arrive at the truth concerning the value and reliability of any medicinal agent. If medical men generally possessed a more solid chemical and physiological education, these modes of investigation would be better understood and more universally practiced. Without a clear knowledge of chemistry, and the required ability to investigate pharmaceutical products by quantitative and qualitative analysis, the physician is as a pilot without a compass—a ship without a rudder.

It is my purpose to communicate to the profession, through your valuable and widely circulated journal, what I know and have witnessed of the effects and results of maltine in the treatment of some of those diseases for which it is recommended, and for which I have prescribed it in my practice—and alluding also to its comparative merits with those remedies claimed to possess similar properties, especially malted barley, which has been a favorite medicine with me since its first introduction to

the profession by Prof. Liebig, in 1866.

It was upon the representation made by a very intelli-

gent druggist and chemist of this city, that I was induced first to give maltine a fair and patient trial. The results were so unexpectedly satisfactory that I at once sent for further samples. The close and attentive watching of the results—both its therapeutic action and investigation of its physical properties—convinced me of several advantages that it possessed over the ordinary extracts of malt, which I had used in similar cases and circumstances. Some of these I will hereafter mention, because they are prominent and apparent, and must attract the attention of all scientific medical men.

First, it is of the utmost importance that the proper machinery should be had for its manufacture, which, as I have already stated, the proprietors of maltine, after great labor and expenditure of money, have perfected most sat-

isfactorily, all original and unique.

Second, carbon, hydrogen, nitrogen, phosphorus, sulphur, iron, magnesium, and potassium, are essential elements in our food, and they can only be obtained by the combined properties of malted barley, wheat, and oats, which we find represented in correct proportions in maltine, and which are not fully represented in any of the malt extracts now in use; and, thirdly, gluten is the most nutritious element found in the cereals, and is analagous to animal fibsin. Of this we find twenty times more in maltine than in any of the other preparations of malt.

Fourth. Liebig says, "Wheat and oats (and they are not contained in ordinary malt extracts) stand first among our list of cereals in containing all the elements in proportions necessary to support animal life. They are especially rich in muscular and fat producing elements. From the foregoing it might appear to a careless reader that the addition of malted barley was not required in maltine, which would be a great and latal error, since it is the most valuable part of the combination, as it contains large proportions of phosphates (which produce bone) and diastase (which materially aids in digestion).

The reader can readily perceive the material advantages exhibited in this simple narration of facts of maltine over the ordinary forms of malted barley, and, in addition, while it is pleasant to the taste, it is also acceptable to

the stomach.

Another important and attractive advantage possessed by maltine is that there is scarcely a remedy prescribed

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whose special and specific properties will not be promoted and strengthened by being combined in some way with it as a vehicle for administration and introduction into the system—thus taking the place of food, which all intelligent physicians consider so essential, when it is desired to introduce medicines into the circulation rapidly, and without irritating the stomach.

In my practice I have universally found maltine and its combinations of increased value to malted barley, in several affections, especially in pulmonary troubles, anæmia, and chlororis, and all forms of dyspepsia. In convalescence from the low grades of our malarial fevers I have obtained the most signal success from the combination of maltine with iron and quinine—in fact, I never dismiss one of these cases of malarial fever from medical treatment until I have ordered one or more bottles of maltine with phosphates of iron and quinia, invariably preventing a returning attack, if the medicine is sufficiently persevered in.

Finally, in all diseases producing or resulting in defective nutrition, and particularly the wasting diseases of childhood, I now invariably prescribe some of the combinations with the most perfect assurance of satisfactory results.

About two months ago a delicate lady of twenty-seven years of age, of luxurious habits, was sent to me from a near city, in an excessively anæmic condition, following parturition and malarial trouble, with great tenderness over the region of the liver and spleen (both enlarged), and dropsical effusion in the extremities. I knew she had been in the hands of skillful physicians, and had the benefit of all usual remedies. She stated at once that her stomach would not tolerate any medicines, and that she had been induced to consult me from my reputation in the use of "hypodermic medication alone," hoping I could benefit her in this way. I concluded it was a good case to severely test the value of maltine. I at once prescribed it with hops, combining it with as much brandy and cream as she could bear. Her delicate stomach retained the first doses, and she improved almost by the hour. In a few days I ordered maltine with beef and iron, and finally with phosphates, iron, quinine, and strychnia, which completed the treatment, no other medicine being used.

Very soon milk was furnished in abundance for her in-

fant, and she returned home strong and robust as ever. I could mention other cases equally as conclusive of the effectiveness of maltine and its combinations, if time and

space permitted.

"Maltine, with pepsin and pancreatine," is one of the most effective combinations in dyspeptic and other stomachic disorders I have ever seen or used. I find it specially adapted to disorders of our malarial climate, and would particularly call the attention of physicians practicing in this region to the certainty and reliability of its action, in all cases where such a combination is indicated.

I could not close this paper without stating that maltine forms, with cod liver oil, a most perfect emulsion, and is the most effective and agreeable manner of administering this most naseous but valuable remedy. I have found patients who had never been able to tolerate it—in other combinations—scarcely object to it thus combined.

There are other combinations with maltine I would like to mention and discuss in this paper, but I can only bear testimony to their being equally as agreeable and effica-

cious as the ones mentioned.

I am satisfied the profession have not been presented with any medicine equal to maltine as containing the elements required to nourish the body—being both food and medicine, as well as a powerfully nutritive tonic. Thus, it has a wide range of action where the prime objects are to support the system, and to invigorate the enfeebled digestive and assimilative processes.

SELECTIONS.

Climatic Treatment of Pulmonary Phthisis.

BY ALFRED L. LOOMIS, M. D.

Read before the American Medical Association, at Buffalo, June, 1878.

During the past ten years my advice has been given to a large number of persons suffering from pulmonary disease. Under my direction pulmonary invalids have taken up their residence for a longer or shorter time in nearly every well-known health resort on this continent. I have sent but few phthisical invalids to other countries, for within our own boundaries may be found every diver-

sity of climate. From these experiences, without entering into the details of individual cases, I have reached

the following conclusions:

First—That we can expect permanent improvement in cases of developed phthisis only after a prolonged residence in the locality in which experience has proved to be best suited to each individual case. Permanent favorable results can not be obtained from an annual change of climate.

Second—That cases of tubercular phthisis in any stage of the disease grow steadily and rapidly worse in all localities. Such cases do best in the quiet, well-ventilated apartments of their own homes, where they can be surrounded by all those influences and circumstances which

tend to make a feeble invalid comfortable.

Third—That cases of fibrous phthisis in every stage, whether the fibrous process commenced in the pleura or in the bronchial tubes, even after retraction of the chest walls, especially in the infra-clavicular region, is well marked, and the bronchial dilations which accompany it give the physical sign of extensive cavities, improve, and often reach a condition of comparative health, when they take up their residence in regions having very high altitude, such as are found in Colorado and the Rocky Mountain range. The benefit which asthmatic and emphysematous invalids derive in these regions is most marked. I know of no locality where these classes of pulmonary invalids make such rapid and permanent improvement. Experience has led me to be very cautious in recommending these regions of high altitude to invalids with catarrhal phthisis. In the advanced stage of this form of phthisis, I have never seen good results from a residence in such regions, and it is quite doubtful whether any one in its first stage has received benefit. It is stated by some of the advocates of the Colorado climate, that by it advanced cases of phthisis are greatly benefited, and often reach a condition of apparent recovery. In these favorable cases I would rather the exact nature of the diseased processes than the physical signs had been given, notwithstanding by some so much importance has been attached to the latter. My own experience leads me to believe that only cases of fibrous phthisis are benefited in regions of very high elevation.

Unquestionably, the majority of cases of pulmonary

phthisis are of the catarrhal variety, and it is in giving advice as to the climate and locality best suited to this class that the greatest experience and judgment are to be exercised by the medical adviser. One thing seems certain, that after the stage of softening and excavation is reached by this class, no climate will long delay the fatal issue. It is during the stage of pulmonary consolidation, or during the period of enfeeblement which precedes consolidation, that we may expect permanent improvement, and

perhaps final recovery.

I have seen only a very limited number of cases of catarrhal phthisis permanently improved by long sea voyages or a residence in a warm climate. A large number in the early stage of this disease, going from a northern to a southern winter, are temporarily improved: after the first apparently beneficial effects are passed, the degenerative inflammatory processes go on more rapidly than before. The invalids whom I have found to be most markedly benefited by a sojourn during the winter months in a southern climate, are those convalescing from some acute pulmonary affection, in whom the delayed convalescence raises the fear of possible phthisical development, and those in whom acquired or hereditary phthisical tendencies exist, yet there may be no positive physical signs of disease of the lungs. The list of such cases is a long one, and the results obtained are most satisfactory. My favorite resorts for such cases are Aiken, in South Carolina; Pilatka, Enterprise and Gainesville, in Florida; and Thomasville, in Georgia. My best results in the stage of consolidation of the catarrhal form of phthisis have been reached in those who have made a prolonged stay (varying from one year to three years) in mountain regions with an elevation of from 1,500 to 2,000 feet. Of such regions the most positive and permanent beneficial results have been obtained in Asheville, North Carolina, and in the Adirondack region in this State.

I am led to believe that persons suffering from catarrhal phthisis do not do well at a higher elevation than 2,500 feet, and also that some regions with a much lower elevation afford all the necessary climatic conditions for this

class of cases.

The mode of life which those suffering from phthisis should adopt is important. The general direction given us, "Live in the open air," but few of those who give or

receive this advice appreciate its full meaning. My own personal experience, as well as my experience in regard to its effects upon others, leads me to believe that a camplife, or a tent-life during the warm season in such localities, as have already been indicated, is of the greatest service in arresting and curing phthisis in those who are not enfeebled. If this kind of life is not practicable, or the invalid's condition renders it hazardous, then spending the day in the open air in pleasurable excursions should be encouraged, even in the feeble.—Hospital Gazette.

Philadelphia County Medical Society.

SCARLATINAL SORE THROAT.

Dr. F. Woodbury said that he had been interested in watching the course of an epidemic, or, rather endemic, of sore throat, that he believed to be connected with scarlatinal poisoning. In a family living next door to a case of typical scarlatina, there were seven children, the oldest fifteen years, the youngest eight months. The oldest, a girl, recently had a severe sore throat, lasting a few days; but, as she kept at her housework, and had no other symptoms, medical attendance was not sought. The next, a boy of twelve years, woke up one morning feeling badly. He could not sit up, and complained very much of his right fore-arm, which he had accidentally struck the day before. He had gone to bed in his usual health. When seen, the arm was swollen, but a contusion was the extent of the injury. A close examination, however, showed a few points of red eruption, resembling morbilli or rubeola, on both arms, but on no other portion of the body. The skin was dry and hot, pulse moderately accelerated; there was no corvza or conjunctival irritation. The fauces and pharvnx were deeply congested and swollen, no false membrane, tonsils enlarged, some prominent glands below the angles of the lower jaw. Ordered to gargle with infusion of black tea, and apply bacon to the neck. Diet chiefly milk. A dose of magnesia was also directed to be given. A prescription was left for chlorate of potassa mixture, which, it was subsequently learned, was not filled. The boy was mildly delirious during the night, but was better the next day. On the third day he was up and about, with the fauces still purple, but less swollen, but he suffered no further inconvenience. At this visit the next younger child was found to have the same condition of the throat, although she had been well the day before. No eruption whatever could be detected. She also had fever, but less marked than her brother. The same treatment was instituted. This was on a Sunday, but something interfered to prevent the physician from calling again until Wednesday, when she was found convalescent, but her younger sister was on the lounge, suffering from the same train of symptoms. The urine had been examined, and found loaded with urates, but contained no albumen. The family being poor, no isolation of any efficient character could be carried out. The chlorate of potassa mixture was given to this child, who was the last one attacked. All recovered. The baby was not attacked.

DISINFECTION IN ZYMOTIC DISEASE,

In reference to protection from zymotic disease, Dr. Woodbury spoke of a tenement, which, owing to its having no cellar and no drainage, was the home of diphtheria. He was cognizant of two outbreaks of the disease in this house. The place had been reported to the Board of Health, who had sent an ordinary non-medical inspector to examine the premises. The report was that the complaint was dismissed, that "no nuisance was found." The house is a trap for some poor persons who have children, the last family having deserted the place on account of the death of a child from malignant diphtheria. He inquired as to the powers of the Board of Health, whether it has the power to condemn a building and order it to be torn down as unfit for human habitation on account of its sanitary condition. Also, is there any machinery at the command of the profession through which premises affected by zymotic disease can be disinfected upon reporting them to the Board of Health?

The Chairman remarked that this subject, as it affected the public health, was an important one; and inquired of Dr. Welch, as physician to the Municipal Hospital, whether or not a public building had been erected for the purpose of disinfecting furniture by hot air.

Dr. W. M. Welch said that some years ago the Board of Health had erected a building for the purpose of disinfecting household goods and furniture, and had urged the people to remove all exposed articles to this establishment for disinfection by heat. This could be done by making application to the Board of Health. Where parties are able to pay, a charge is made for the service, but in poor cases nothing is charged. The Board of Health very frequently disinfected houses. Dr. Taylor, the medical inspector of the Board, would fully confirm this statement.

Dr.W. B. Atkinson said that the authorities are very slow in acting upon complaints of nuisances affecting the public health. The entire family of a fellow-member of this society had recently suffered from an outbreak of diphtheria, which was traced to a defective drain in front of the house. A number of times this nuisance was complained of, and finally, with the greatest difficulty, and only as a personal favor, men were sent to repair it. Four children of this family suffered from malignant diphtheria, and one is now lying very ill. The county society should take some action in this matter, and see that proper service is rendered. The inspectors should have some special training for the work. If not medical men, they should, at least, understand the principles of hygiene.

Dr. J. H. Taylor, by invitation from the Chair, said that the Board had no particular way of disinfecting premises. The insanitary condition of houses is generally due to the imperfect trapping of the water-closet pipes. These traps become perfectly useless by "siphoning out," so that they offer no protection from the entrance of sewer-gases. In disinfecting rooms, free chlorine or sulphur fumes may be used. At the Lazaretto, chlorine is chosen for disinfecting vessels, but it is less adapted for dwellings. For drains and wells, sulphate of iron solution is generally employed.

The Board of Health, in his opinion, is not empowered to destroy property by tearing down disinfected premises; but it might board them up in case of an epidemic.

Dr. Atkinson referred to the vast amount of excrement which is exposed and spread out upon the truck farms in the lower part of the city, or, as it is called, "the Neck." The air is constantly loaded with the stench from this ordure, and he was surprised that the inhabitants were not every one of them sick of some of these "filth diseases." He was now watching the progress of an outbreak of diphtheria of a malignant type, and thought that the attention of the Board of Health should be directed to the matter. In reply to a question from the Chair, he replied

that he had not reported these cases to the Board of Health, as he had been only called in consultation.

The President said that every case of diphtheria must be reported to the Board of Health, under a penalty for neglect.

Dr. Hamilton believed that if filth was the cause of these diseases, they would be confined to the cities, whereas they are found throughout the country as well.

FRANK WOODBURY, Reporting Secretary.

The Pathology of Membranous Dysmenorrhœa.

BY DR. CORRY.

THE author related the case of a patient who menstruated first at the age of fifteen, but never passed any membrane till after her marriage, at the age of thirty. Within two years of her marriage she had three miscarriages, all between the second and third months. In April, 1876, she came as an out-patient at St. Thomas' Hospital with subinvolution and retroversion. From this time she almost invariably at the menstrual periods passed membranes which had all the character of the uterine mucous membrane, forming perfect casts of the uterus. The membrane was usually passed on the second day of the period, up to which time she had acute pain. The period continued for two or three days after its expulsion, and was always profuse. On two occasions the membrane did not appear, and on both occasions she had previously been away from her husband. The intervals varied between twenty-five and thirty one days. The longer the interval, the larger was the membrane passed. She was admitted while menstruating into the hospital, and the period ceased on May 4th, 1877. On the 23d it recurred, but without any membrane. Iodine was applied to the cavity of the utems. She reappeared in February, 1878, and stated that she had been living apart from her husband for nine months, and during that time had menstruated regularly without any membrane. He thought the case favored the view that menstruation was due to the abortion of an unimpregnated ovum, together with its nidus, the mucous membrane of the uterus. The order of events in a normal menstrual cycle would then be—(1) The arrival of an unimpregnated

ovum in the uterus at, or soon after, a menstrual period. (2) The development of this ovum and its nidus, the mucous membrane up to a certain point. (3) The arrival to maturity of the next Graafian folliele, accompanied toward its completion by ovarian irritation, which being reflected to the uterus causes uterine contraction. (4) The abortion of the old ovum and its nidus, accompanied by a discharge of blood. (5) The rupture of the Graafian follicle and the passage of the new ovum along the Fallopian tube. A microscopic section of the membrane passed in the case reported was shown.— Obstetrical Journal.

The Ventilation of Bedrooms.

ALTHOUGH the blood-circulation is less active during sleep than when awake, it is of considerable importance to health that bedrooms should be well ventilated. The sleeper, like a bed-ridden person, is entirely dependent upon the atmosphere supplied to him for the means of carrying on the chemical purification and nutrition of his body. He must breathe the air that surrounds him, and he does this for a lengthy portion of each period of twenty-four hours, although it is probable that in a large majority of cases the atmosphere has become so deteriorated by the expiration of earbon and the emanations from the body generally, that if the senses were on the alert some change would be sought as a mere matter of preference. When a person places himself in a condition to take in all air, without being able to exercise any control over its delivery, he ought to make sure that the supply will be adequate, not merely for the maintenance of life, but for the preservation of health. If a man were to deliberately shut himself for some six or eight hours daily in a stuffy room, with closed doors and windows (the doors not being opened even to change the air during the period of incarceration), and were then to complain of headache and debility, he would be justly told that his own want of intelligent foresight was the cause of his suffering. Nevertheless, this is what the great mass of people do every night of their lives with no thought of their imprudence. There are few bedrooms in which it is perfectly safe to pass the night without something more than ordinary precautions to secure an inflow of fresh air. Every sleeping-

apartment should, of course, have a fireplace with an open chimney, and in cold weather it is well if the grate contains a small fire, at least enough to create an upcast current and carry off the vitiated air of the room. In all such cases, however, when a fire is used it is necessary to see that the air drawn into the room comes from the outside of the house. By a facile mistake it is possible to place the occupant of a bedroom with a fire in a closed house in a direct current of foul air drawn from all parts of the establishment. Summer and winter, with or without the use of fires, it is well to have a free ingress for pure air. This should be the ventilator's first concern. Foul air will find an exit if pure air is admitted in sufficient quantity, but it is not certain pure air will be drawn in if the impure is drawn away. So far as sleeping-rooms are concerned, it is wise to let in air from without. The aim must be to accomplish the object without causing a great fall of temperature or a draught. The windows may be drawn down an inch or two at the top with advantage, and a fold of muslin will form a "ventilator" to take off the feeling of draught. This, with an open fireplace, will generally suffice, and produce no unpleasant consequences, even when the weather is cold. It is, however, essential that the air outside should be pure. Little is likely to be gained by letting in fog or even a town mist.—The Lancet, October 19, 1878.

Spinal Irritation.

[From Dr. McCall Anderson's "Clinical Medicine."]

In the year 1828 the late Dr. Brown, of Glasgow, directed attention to a class of cases illustrative of disorder of the spinal cord, to which he gave the name of spinal irritation. This affection had previously been alluded to by Mr. Player, of Malmesbury, in an article in the Quarterly Journal of Science for January, 1822, and a good many years afterward it formed the subject of important contributions to our knowledge of it as a distinct affection from the pen of the late Mr. Teale, of Leeds, and a few years later from the Messrs. Griffin, of Limerick. To these gentlemen we owe almost all that we know of it at the present day.

It is especially apt to occur in debilitated, nervous, and

hysterical subjects, and, although it is sometimes met with in males, it is, par excellence, a disease of the female sex. This is well shown by the statistics of the Messrs. Griffin, for of one hundred and forty-eight cases, twenty-six occurred in males, forty-nine in married women, and seventy-three in girls. According to Radcliffe, a strain or blow upon the back is apt to prove its starting point, although I can not say that I have noticed such a connection, and it is the opinion of some that it is at times

hereditary.

The true nature of this morbid state is much disputed, and as the disease is one which is seldom, if ever, fatal, it is somewhat difficult to place its pathology upon a reliable basis. According to Brown, "the immediate cause is spasm of one or other of the muscles arranged along the spine, altering the position of the vertebræ, or otherwise compressing the nerves as they issue from the spinal marrow." Teale, on the other hand, attributed it to congestion, which by continuance and repetition may so far impair the tone of the capillaries as to produce a state of actual inflammation; while Radcliffe seems of opinion that the opposite condition, namely, capillary contraction and bloodlessness, is nearer the truth. But whatever the correct interpretation may be, certain it is that the abstraction of blood by leeches or cupping-glasses, applied over the tender spine, and the application of blisters in the same situation, that is, the usual remedies for local congestion, are the most efficacious means of cure.

The most characteristic symptom of spinal irritation is tenderness of the spine, which may implicate it in its whole length, but much more frequently at one or several parts, and the symptoms of functional derangement of internal organs, and the pain so often complained of, generally bear some relation to the seat of the tenderness. In a large proportion of cases the patient makes no complaint of uneasiness in the region of the spine, and when asked if he has any pain in the back, answers as often in the negative as in the affirmative, so that, unless this symptom is specially looked for, and the spine carefully examined, the tenderness is exceedingly apt to be overlooked. For this reason, and because there is hardly a single disease in the whole category of ailments which may not be more or less accurately simulated by it, errors of diag-

nosis are of every-day occurrence. The following points, all of which, with the exception of the last, perhaps, I can verify from my own experience, are specially insisted upon by the Messrs. Griffin as aids to the diagnosis:

"1. The pain or disorder of any particular organ being altogether out of proportion to the constitutional disturb-

ance.

"2. The complaints, whatever they may be, are usually relieved by the recumbent position, always increased by lifting weights, bending, stooping, or twisting the spine; and among the poorer classes, often consequent to the labor of carrying heavy loads, as in drawing water, etc.

"3. The existence of tenderness at that part of the spine which corresponds with the disordered organ, and the increase of pain in that organ by pressure on the corre-

sponding region of the spine.

"4. The disposition to a sudden transference of the diseased action from one organ or part to another, or the occurrence of hysterical symptoms in affections apparent-

ly acute.

"5. Perhaps we may mention the occurrence of continued fits of yawning or sneezing. They are not very common symptoms; but as scarcely ever occurring in acute or organic diseases, they may generally be considered as characteristic of nervous irritation.'

Examination of the Throat and Posterior Nares.

To examine the throat well, the nose should be held so as to compel breathing through the mouth. Thus the soft palate will be raised, the palatine arches widened, and the tonsils and the back of the pharynx fairly exposed. Pressing the tongue downward, provided it be done very gently, is also of advantage. Rude treatment the tongue would resist. The forefinger can be passed into the throat as low as the bottom of the cricoid cartilage, and thus search the pharynx down to the top of the esophagus, and the hyoid space (on each side) where foreign bodies are so apt to lodge. In introducing a stomach pump, the finger should keep the instrument well against the back of the pharynx so as to prevent its slipping into the larynx.

Put the finger into the mouth, and feel the anterior

border of the coronoid process of the jaw. On the inner side of this process, between it and the tuberosity of the upper jaw, is a recess, where a deeply-seated temporal abscess might burst, or might be opened. Behind the last molar tooth of the upper jaw we can distinctly feel the hamular process of the sphenoid bone; also the lower part of the pterygoid fossa, and the internal pterygoid plate. Behind, and on the outer side of the last molar, can be felt part of the back of the antrum and of the lower part of the external pterygoid plate.

On the roof of the mouth we can feel the pulsation of the posterior palatine artery. Hemorrhage from this vessel can be arrested by plugging the orifice of the canal, which lies (not far from the surface) on the inner side of the last molar, about one-third of an inch in front

of the hamular process.

When the mouth is wide open, the pterygo-maxillary ligament forms a prominent fold readily seen and felt beneath the mucous membrane, behind the last molar teeth. A little below the attachment of this ligament to the lower jaw we can easily feel the gustatory nerve, as it runs close to the bone below the last molar tooth. The exact position of the nerve can be ascertained in one's own person by the acute pain on pressure. A division of the nerve, easily effected by a small incision in the right place, gives much temporary relief in cases of advanced carcinoma of the tongue.

To feed a patient in spasmodic closure of the jaw, it is well to know that there exists behind the last molar teeth

a space sufficient for the passage of a small tube.

A surgeon's finger should be familiar with the feel of the posterior nares, and of all that is within reach behind the soft palate. This is important in relation to the attachment of polypi, to plugging the nostrils, and the proper size of the plug. In the examination of this part of the back of the throat it is necessary to throw the head well back, because, in this position, nearly all the pharynx in front of the basilar process comes down below the level of the hard palate, and can be seen as well as felt. But when the skull is horizontal, i. e., at a right angle with the spine, the hard palate is on a level with the margin of the foramen magnum, and the parts covering the basilar process are concealed from view.

The head, then, being well back, introduce the fore-

the knife inward.

finger behind the soft palate, and turn it up toward the base of the skull. You feel the strong grip of the superior constrictor. Hooking the finger well forward, you can feel the contour of the posterior nares. Their size depends upon the anterior, but rarely exceeds a small inch in the long diameter, and a small half-inch in the short. The plug for the posterior nares should not be larger than this. Their plane is not perpendicular, but slopes a little forward. You can feel the septum formed by the vomer, and also the posterior end of the inferior spongy bone in each nostril.

Before taking leave of the throat, look well at the position of the tonsils between the anterior and posterior half arches of the palate. In a healthy state they should not project beyond the level of these arches. In all operations upon the tonsils, we should remember the close proximity of the internal carotid artery to their outer side. Nothing intervenes but the pharyngeal aponeurosis, and the superior constrictor of the pharynx. Hence the rule in operating on the tonsils always to keep the point of

In troublesome hemorrhage from the tonsils, after an incision or removal, it is well to know that they are accessible to pressure if necessary by means of a padded stick, or even a finger.—From Holden's Landmarks.

Aspiration of the Spleen.

Professor Wm. A. Hammond, of New York, reports (Richmond and Louisville *Medical Journal*, August, 1878) a successful case of this operation—the first, we believe, on record. The following is an abstract of the paper:

W. P. T., a gentleman residing in Parkersburg, West Virginia, consulted Dr. Hammond, February 10, 1878. He had suffered for several weeks with a disease diagnosticated as inflammation of the spleen. He had been treated with quinine and blisters, and the hypertrophy of the organ had been considerably reduced, but medication had failed to further lessen its size, or to ameliorate the pain, difficulty of breathing and febrile movement which still existed. When first examined there was a great tenderness on pressure over the splenic region, and the inferior border of the organ was about 3½ inches lower than nor-

mal. There were no adhesions between it and the abdominal wall, but it was thought to be adherent to the diaphragm. The lower border was of firm consistence, while the upper part was soft and fluctuating. Over this latter point the abdominal wall was protuded so as to

make the swelling evident on simple inspection.

Sulphate of quinia in hydrobromic acid was prescribed, and the galvanic current was applied to the abdomen, so as to act directly upon the spleen, with the object of inducing contraction of the fibrous coat of that organ. To combat some degree of active inflammation still present, the actual cautery was applied, as a counter-irritant, over the most prominent point. It was agreed that, if there was no decided improvement in a few days, the aspirator should be used to remove the softened mass of brokendown spleen pulp, pigment, and blood, supposed to be present.

Although, to a certain extent, this treatment proved beneficial, no marked reduction in the size of the spleen was perceptible, so the operation was determined upon.

February 16, the patient reclining upon his left side, a large aspirator needle was introduced through the intercostal space between the ninth and tenth ribs, at a point two inches behind a line let fall from the left axilla and on a level with the middle of the eleventh dorsal vertebra. The skin and latissimus dorsi were pierced, the former tissue having been well drawn upward to the extent of over an inch, and then the ratchet of the aspirator was turned so as to create a vacuum, and the point of the needle carried in a direction toward the umbilicus, through the intercostal space into the spleen. At a depth of about $1\frac{1}{4}$ inches the instrument began to fill up rapidly with a dark, grumous fluid. This was forced into a wide-mouthed graduated jar, and exhaustion again effected, and so on until 81 ounces were evacuated. The needle then became clogged, and it was not determined whether all the matter was removed or not. It being considered preferable to repeat the operation, if necessary, rather than to exert any great degree of force, the needle was withdrawn, and the spleen allowed to resume its normal position, the entrance of air into the peritoneal cavity being thus effectually prevented.

The patient was at once relieved of pain, and the size of the spleen was manifestly reduced, its lower border

being an inch higher than before the operation. Rest in bed was rigidly enjoined, but no bandages or dressings were applied. At 8 o'clock P. M. he was perfectly comfortable; there was neither pain nor fever, and he had

slept quietly several hours.

Prof. A. C. Loomis visited him next day, at Dr. Hammond's request, with special reference to the pleurisy, which was also present. A very extensive double pleurisy was found. He examined the region of the spleen and expressed the opinion that there had been acute inflammation of the organ and subsequent softening, and that the operation had probably, by removing the degenerated tissue, prevented the formation of an abscess and the death of the patient. The case progressed without an untoward symptom of any kind. He gained strength, and the uncomfortable sensations in the splenic region were so far lessened that, on February 27, he went to Baltimore to remain a few days before going home. In May no symptoms remained except those resulting from pleurisy, and those were gradually disappearing.

Microscopical examination of the substance removed showed that it was composed of broken-down spleen tissue, spleen pulp in a greater or less degree of disorganization, blood, and a large quantity of pigment free and contained in cells, the former greatly predominating. There were also numerous white-blood corpuscles. On allowing it to stand the pigment soon settled to the bottom of the vessel, forming a stratum one-fourth of the depth of

the whole column.

After giving a resume of the clinical and pathological history of softening of the spleen, he calls attention to the large amount of pigment in this case, and concludes his paper with the following reference to the operation:

"There are several points of interest connected with the operation to which reference might be made. The most important of these is, I think, the comparative freedom from danger of the procedure when properly done. I have repeatedly, in cases of hypertrophy of the spleen, injected a drachm or more of the fluid extract of ergot into the organ without in any case observing the least untoward result. Care should be taken to make the opening a valvular one, and to puncture in an intercostal space, and where the spleen is in contact with the solid abdominal wall.

"Again, the puncture should be made in such a way that the point of the needle enters the spleen at an acute angle to the surface. The flow of blood into the peritoneal cavity, even if liable to take place, is thereby greatly impeded. The great contractility of both the serous and fibrous coats of the spleen greatly militate against the liability to danger from this cause."

Intestinal Obstruction.

Its Diagnosis.—When a child becomes suddenly the subject of symptoms of bowel obstruction it is probably either intussusception or peritonitis. When an elderly person is the patient, the diagnosis will generally rest between impaction of intestinal contents and malignant disease. In middle age the causes of obstruction may be various; but intussusception and malignant disease, both of them common at the extremes, are now very unusual. Intussusceptious cases may be known by the frequent straining, the passage of blood and mucus, the incompleteness of the constipation and the discovery of a sausage-like tumor, either by examination per anum or through the abdominal walls. In intussusception the parietes usually remain lax, and there being but little tympanites it is almost always possible without much difficulty to discover the lump by manipulation under ether. Malignant stricture may be suspected, when in an old person continued abdominal uneasiness and repeated attacks of temporary constipation have preceded the illness. It is also to be noted that the constipation is often not complete. If a tumor be present and pressing on the bowel it ought to be discoverable by palpitation under ether through the abdominal walls, or by the examination by the anus or vagina, great care being taken not to be misled by scybalous masses. If repeated attacks of dangerous obstruction have occurred with long intervals of perfect health, it may be suspected that the patient is the subject of a congenital diverticulum, or has bands of adhesion, or that some part of the intestine is pouched and liable to twist. If, in the early part of a case, the abdomen becomes distended and hard, it is almost certain that there is peritonitis. If the intestines continue to roll about visibly, it is almost certain that there is no peritonitis. This symptom occurs chiefly

in emaciated subjects, with obstruction in the colon of long duration. The tendency to vomit will usually be relative with three conditions and proportionate to them. These are, (1) the nearness of the impediment to the stomach; (2) the tightness of the constriction, and (3) the persistence or otherwise with which food and medicine have been given by the mouth. In cases of obstruction in the colon or rectum, sickness is often wholly absent. Violent retching and bile vomiting are often more troublesome in cases of gall stones or renal calculus simulating obstruction, than in true conditions of the latter. Fecal vomiting can occur only when the obstruction is moderately low down. If it happens early in the case, it is a most serious symptom, as implying tightness of constriction. The introduction of the hand into the rectum, as recommended by Simon, of Heidelberg, may often furnish useful information.

Its Treatment.—(1) In all early stages, and in all acute cases, abstain entirely from giving either food or medicine by the mouth. (2) Use anesthetics promptly. Under their full influence examine the abdomen and rectum carefully before tympanites has concealed the conditions. Administer large enemata in the inverted position of the body. If advisable, practice abdominal taxis. If you do not at first succeed, do it repeatedly. (3) Copious enemata, aided perhaps by the long tube, are advisable in almost all cases, and in most should be frequently repeated. (4) Fluid injections may be sometimes replaced by insufflation of air in cases of invagination, since air finds its way upward better and is more easily retained. It is, however, somewhat dangerous, and has perhaps no advantages over injections with the trunk inverted. (5) Insufflation is to be avoided in all cases of suspected stricture, since the air may be forced above the stricture and there retained. (6) Saline laxatives are admissible in certain cases where impaction of feces is suspected, and in cases of stricture where fluidity of feces is advisable. (7) Opium must be used in proportion to the pain which the patient suffers. It should be administered hypodermically or by the rectum, and should be combined with belladonna. If there be not much pain or shock it is better avoided, since it increases constipation and may mask the symptoms. (8) A full dose of opium, administered hypodermically, will put a patient in a favorable condition

for bearing a prolonged examination under ether and attempts at abdominal taxis. (9) In cases of uncertain diagnosis it is better to trust to the chance of spontaneous cure, or relief by repeated abdominal taxis, than to resort to exploratory operation; or in desperate cases iliac enterotomy should be done. Operations for the formation of artificial anus in the right or left loin may be resorted to whenever the diagnosis of incurable obstructive disease in the lower bowel is made. (10) The operation for the formation of an artificial anus through the anterior part of the abdominal wall and into the small intestines should be resorted to only in certain cases of insuperable obstruction in which the seat of disease is believed to be above the cecum. (11) In all cases in which the precise seat of the disease is doubtful, but the large intestine is suspected, the right loin should be preferred. If the colon here be found to be empty, the peritoneum may be cautiously opened and a coil of distended small intestine brought into the wound. (12) Cases of intestinal obstruction are strictly surgical, and not medical cases.-Dr. Jonathan Hutchinson, British Medical Journal.— Detroit Lancet.

Therapeutic Results with Pilocarpin.

The results of recent investigations are here summed up. Dr. Demme, of Berlin (London Medical Record), arrives at the following conclusions:

1. Pilocarpin is an effective diaphoretic and sialagogue

in childhood.

2. It is borne very well, in appropriate doses, even by

children of very tender years.

3. Unfavorable after symptoms are but rarely observed, and, probably, may be altogether prevented by the administration of small doses of brandy before the injection.

4. The conditions in which it is chiefly indicated are the parenchymatous inflammations of the kidney, with dropsy,

following scarlatina.

5. Pilocarpin does not appear to exercise an influence

on the heart's action.

The Hospital Gazette states that an important physiological effect of Pilocarpin, according to Dr. Zielewicz, of Posen, is its power to reduce animal heat. He has ob-

served a decrease of temperature amounting to as much as 2, $2\frac{1}{2}$, and even 3 degrees, averaging, however, 1 to $1\frac{1}{2}$ degrees. In very few instances there was a slight increase of the temperature. Again, it seems doubtful to me whether the diminution of the temperature can be attributed primarily to the action of pilocarpin, or whether it is not due to, and only temporarily caused by, the evaporation of the perspiration. Zielewicz arrives at the following conclusions:

1. Pilocarpin is a reliable diaphoretic in the diseases of

children.

2. The unpleasant symptoms which occasionally follow the administration of this remedy interfere with its more general use.

3. To eliminate or diminish these complications the fol-

lowing rules should be observed:

a. The dose of pilocarpin should be as small as possible.

b. A small amount of morphia should be administered with the pilocarpin, best in the proportion of ten pints of hydrochlorate of pilocarpin to one pint of hydrochlorate of morphia.

c. To prevent collapse a few drops of camphorated oil

should be added to the solution.

Dr. Felsenreich, assistant to Prof. Gustav. Braun at the Vienna General Hospital, observes that Dr. Massmann's statements (Medical Times and Gazette, July 13th, page 56) on the employment of pilocarpin in the induction of premature labor must lead to further inquiry into the acton of this substance on the uterus. At Prof. Braun's request he tried the efficacy in nine cases of ataxy of the uterus, with reference to its future employment in cases of hemorrhage produced by this cause. In but three of the cases did the hypodermic injection take effect, and that only at the end of ten minutes; so that it can not be regarded as a suitable means for combating active hemorrhage, in which promptitude of action is so important a factor. As in these cases, too, there is no time to examine the action of the heart, another contra-indication arises, for, as Petrina has shown, whenever this action is in any wise abnormal, the greatest care is required in the administration of pilocarpin, for arhythmia or an arrest of its action may then be easily induced. Indeed, as any considerable hemorrhage does greatly disturb the action of this organ, this itself is a contra indication. These considerations do not apply to the induction of premature labor, and additional trials of the power of pilocarpin for

this purpose may be made without danger.

Dr. P. K. Kretschmar adds, in the Hospital Gazette, that the Hydrochlorate of Pilocarpin, derived from the alkaloid found by E. Hardy in the leaves and in the root of pilocarpus pinnatus, is, in many respects, the most valuable of the preparations of jaborandi. It comes in small, white crystals, very soluble in water, and is for different reasons especially adapted for hypodermic medication. Its action resembles that of the drug itself, but it is more uniform and reliable than either the infusion or the fluid extract. It also influences the bronchial secretions by making them more fluid, and it has been used with advantage in croup, bronchitis, etc. A solution is made by dissolving one-half a grain of hydrochlorate of pilocarpin in thirty minims of pure water. I use in cases of children from six to ten years of age, ten minims of this solution, 15 grain hypodermically, and repeat the injection once or twice the next or following day. To adults I have given twenty minims (\frac{1}{3} grain) repeated every day for three days.

The simplicity and almost painless manner of its administration, the fact that its hypodermical use does not cause any irritation, or abscess at the point of injection, the easy manner by which we are able to administer it in a state of uræmia, unconsciousness during convulsions, etc., make it a most valuable remedy in the treatment of children. I used it in five cases of parenchymatous nephritis following scarlet fever, four of which occurred in children under twelve years of age, and I can only state that its action was very satisfactory, although it produced considerable vomiting in one and moderate emesis in another case.

Harmlessness of Urea in the Blood.

THE London Medical Record mentions experiments by MM. Feltz and Ritter, to show that pure urea never brought on convulsive symptoms. Urea injected into the blood was eliminated very rapidly by the urine, and when it existed in considerable quantities in the organism it did not, as generally supposed, undergo a rapid transformation into carbonate of ammonia. Dogs into which urea was injected, after the renal vessels were tied, to prevent the rapid

840 AGUE.

elimination of the poison, showed no more marked convulsive symptoms than others in which the same ligature was made without the injection. The convulsive symptoms observed with urea were produced by an impure substance containing ammoniacal salts. The authors summed up in the following conclusions: 1. Pure urea, whether natural or artificial, injected into the venous system in large quantities, never brings on convulsive symptoms; it is rapidly eliminated by the secretions. 2. There are no ferments in the normal blood which convert the urea into ammoniacal salts. The rapidity of elimination can not be regarded as the cause of this non-conversion, for by the suppression of the renal secretion the elimination of the urea may be retarded without accelerating the supervention of the eclampsia. The urea which in large doses brings on convulsions is always impure urea, which contains ammoniacal salts, which are easily shown to be present by Nessler's reagent.

Ague.

Ague is now such a rare disease in England that researches into its pathology and etiology have been but little prosecuted of late years. One of the most interesting pathological questions connected with the disease, as Dr. Maclean observes, is "Why the miamastic poison, unlike that of rheumatic fever, variola, or typhoid, should produce a periodical and not a continued fever?" In the case of relapsing fever a definite connection between the occurrence of the paroxysms and the presence of a spiral organism (Spirochete obermeieri) has been repeatedly ob served. Although in ague no organism has as yet been detected in the blood of patients during the febrile paroxysms, still it is not impossible, when the research is prosecuted by as many and as skillful observers as has been the case with relapsing fever, a similar discovery may be made. But while we are in ignorance of the exciting cause of the recurrent paroxysms in ague, the channel through which the poison, whatever it be, is conveyed into the system is also an unsettled point. The majority of writers hold the opinion of Lancisi that the sole cause of intermittent fever is the air of marshes, Evidence, however, of very strong character seems to point to water

being also a channel for the conveyance of the poison. Take, for instance, the case recorded by Boudin, of three vessels sailing from Algiers to Marseilles conveying eight hundred soldiers, who on shore had all been exposed to the same atmospheric influence. Two ships were supplied with good water, but the third with water from a marsh. The two former arrived at Marseilles without a sick man, but the third ship lost thirteen men, and had one hundred and twenty sick, ninety-eight of whom were affected with malaria. Similar is the outbreak of ague at Tilbury Fort in 1872, quoted in the last edition of Parkes' "Hygiene," where thirty-four men, out of a garrison of one hundred and three, were seized with ague, while the people at the railway station and the coastguard men and their families just outside the fort entirely escaped. The troops had been supplied with water stored in tanks, collected from the rain-water of the roofs, while the people outside obtained theirs from a spring near the railway station, the atmospheric condition in both cases being the same. The outbreak or ague among the troops at Cyprus offers an opportunity for the investigation and settlement of these points, and the Government would do wisely to recognize its responsibility in this respect by appointing a commission to make a scientific inquiry into the whole question.— London Lancet.

The Use of the Ophthalmoscope in Errors of Refraction.

BY W. CHEATHAM, M. D.

My attention has been lately attracted to this subject more particularly by a case I now have on hand. Miss G., a scholar of one of our fashionable boarding-schools, has complained for some time of near-sightedness. She had consulted an oculist in one of the northern States, who had given a written opinion, stating that she was near-sighted $\frac{1}{16}$ in the right eye and $\frac{1}{30}$ in the left, giving a very unfavorable prognosis, saying that the disease was progressive, consequently there was great danger in it ending in total blindness. Such an opinion of course frightened the young lady and her parents very much. She came to me about the 1st of November for an opinion on her case. On examination with the test-glasses I found

the oculist's record of vision correct. Vision of the right eye was only $\frac{1}{10}$ of normal, but with a glass of sixteen-inch negative focus it was perfect; vision of the left was $\frac{1}{5}$ but with a near-sighted glass of thirty-inch focus was normal. I next examined her eyes with the ophthalmoscope. I found I could see the fundus of the right eye perfectly through a very weak near sighted glass, one of about seventy-two inch focus. In the left I discovered over-

sighted astigmatism of a small degree.

We have here one of a class of cases of which I have written and talked so much. It illustrates the impossibility of adapting glasses to emmetropic eyes without a thorough knowledge of the ophthalmoscope and its use. This will be better understood after I give the result after the use of atropia. I commenced immediately putting into the eyes a solution of atropia sulph. (two grains to one ounce of water) four times a day. This has been kept up for twenty days. Vision of right eye perfect, with negative or near-sighted glass of twenty-inch focus. Only a slight decrease of the near-sightedness. Vision of the left eye almost perfect with no glass; a weak astigmatic glass bringing it to $\frac{20}{20}$ or one. All the supposed near-sightedness in this eye has disappeared.

This is what I call spasms of accommodation. The ciliary muscle has gotten into this state of spasm, consequently gives an apparent near-sightedness. The atropia is to be continued until the spasm of the muscle of the right eye is completely overcome. Judging from the ophthalmoscopic examination, I tell the parents that under a continuation of the use of the atropia the right eye will prove to be emmetropic or normal, and the left eye will show slight over-sighted astigmatism. Thus we see near-sightedness as diagnosed by an oculist of reputation dis-

appear under the use of atropia.

One can judge from this the importance of being able to use the ophthalmoscope as an optometer. Had I not been able to do so, I would have ordered the near-sighted glass, after using the atropia two or three days, which would have only increased the spasm of the ciliary muscle, the attending pain, and the great danger of the eyes becoming permanently myopic.

I must impress upon the profession the importance of not taking the optic nerve entrance as the objective point in measuring refraction with the ophthalmoscope. The macula lutia, where the image is formed, is the proper point. The macula and optic disc may differ very much as to their distance from the anterior portion of the eye. The disc may be emmetropic and the macula quite myopic. Therefore in using the ophthalmoscope as an optometer, measure the refraction of the eye at the macula and not at the disc.

How is it possible for any one to tell when the accommodation is thoroughly relaxed, without the ophthalmoscope? Take the case mentioned here, for instance, and how could any one have told whether or not it was relaxed without the ophthalmoscope? No one would use the atropia for such a length of time to paralyze the accommodation, unless he used the means I did, and see it

was not paralyzed.

Two things are very necessary in order to use such an optometer: First, the examiner must have perfect control over his own accommodation. He must be able to relax at pleasure. Unless he can, it is not possible for him to make a perfect ophthalmoscopist. Second, he must have a good instrument, and understand the use of it. To think of examining an eye with a Leibrich or a similar instrument is absurd. The Loring pattern is the best. With the lenses placed in the disc behind the mirror, so as to rotate each over the perforation in the mirror when necessary, makes it the most convenient as well as the most perfect of ophthalmoscopes.

In closing this article we draw the following conclusions: Had I not been able to use the optometer, I would have ruined this young lady's eyes by prescribing near-sighted glasses. No one should be suited for near-sighted glasses without an ophthalmoscope examination by one capable of using it as an optometer.—Louisville Med.

News.

MICROSCOPY.

The Evolution of the Microscope.

THE peculiar tone of some recent papers and discussions has suggested some thoughts on the line of demarkation between science and philosophy, which are presented in the present essay. It may be considered that some of the

following assertions are too strong, and rest upon the credulity of the writer rather than scientific proof; but they are abundantly justified by the statements of really scientific papers, and are quite paralleled by the assertions of men whom all the world calls scientific.

While the facts of mechanism remain the same as twenty years ago, the way of viewing those facts has in these twenty years been utterly reversed. The great problem of mechanism now is to explain the marvelous adaptation of machines to the conditions surrounding them, seen in every detail of structure and work, from the subdivisions on the burning candle, or from the hour glass, to the elaborate chronometer, so diversely and accurately adjusted to the flight of time. For the old answer to the problem we may repeat the statement that through the whole history of mechanism there was a shaping and adjusting of time, measuring material with reference to the mental capacity of a being who was conscious of the succession of phenomena, or time. That is, to paraphrase a lately much-employed Bible text, a clock was made for man, not man for a clock. This view the present answer to the problem of mechanism directly reverses, saying, man was made for a clock, and not a clock for man; or to reverse the statement before made, through the whole history of mechanism there was a shaping and adjusting of the mental capacities of beings who are conscious of succession of phenomena, or time, with reference to time-measuring material.

Under the old regime, mechanics, influenced by theology, found a sufficient explanation for every new case of adaptation in the word "design." They sought no further. The habit of regarding mechanical structures as due to the plans and designs of a mechanic, has effectually blocked the avenue of explanation by physical causes. But the idea of design, as it used to be understood, is now forever erased from mechanics, as well as from natural theology, of which it was the chief support. A few brave men have, against the almost fatal pressure of theology, succeeded in establishing, even to the conviction of many early opponents, the revolutionizing principle that mechanism, in all its complexity, is the product of physical nature—the very principle discovered by Empedocles long before Darwin's doctrine of the survival of the fittest, and announced in the following words: Adaptations

preponderate in nature just because it is their nature to perpetuate themselves, while what fails has long since perished. In other words, according to this philosophy, things are as they are because it is their nature to be so. The simplicity of this philosophy is evident, and when universally adopted will put an end to all laborious investigation respecting the causes of things. This universal adoption will surely come to pass, for the progress of mechanical science is a continual revelation of the dependence of mechanism upon physical conditions, a dependence not transitory or local, but permanent and general; a dependence like that of the potter's vessels upon the nature of their future contents and purposes, which determine whether they shall be conical or globular, perforated or solid, glazed or porous.

The investigation of any department of mechanics, say that of microscopes, should then begin with the questions, "What, in physical nature, makes these machines necessary to man? What does physical nature offer for their building? And how does this building take place?" These questions answered, it is irrelevant to call upon design; for a full explanation has been discovered in terms of inorganic nature, and there ends the mechanician's problem. If it be asked whence comes inorganic nature, I must reply that I do not know; and if upon this void of ignorance—their usual ground—theologians erect another structure of design, or some hypothesis of a necessary first cause, I must leave their demolition to a future Darwin.

Philosophers need microscopes to observe minute structures, and those conditions in the environment which determine that need are quickly found, since "it is their nature" to observe minutiæ. But the proper observation of minutiæ would be impossible without a proper stand to resist external vibrations, and proper lenses for enlarged and distinct vision. Having found abundant reasons for the existence of microscopes, we next inquire what are the resources of nature available for their construction, and how are these resources employed? earth contains abundance of metallic and siliceous elements, which are essential to microscopic purposes; but these resources have not all at once shaped themselves to the present state of the microscope, but little by little. without design, lenses and mechanism have been arranged, and those fittest for the purpose have been retained, until

"Physiology, so closely connected with histology, is receiving a great deal of attention; the microscope has been of great service in this department. When the beauties and complications of the human system are revealed to us, it is but natural that we should study the uses of it, and the results of its action. On the other hand, when we find results we look for the causes. We find so constantly one depending on the other that they are necessarily studied together, giving an immense field for microscopic research.

"Not many years ago the principal use made of the microscope, by the average physician, was the examination of urine. Now it is applied to the examination of nearly all the solids and fluids of the body, not excluding excrementitious matter; and as a means of diagnosis and prog-

nosis, it has become absolutely indispensable.

"Once familiar with the normal structure and healthy action of the human system, we are prepared to observe deviations from the healthy standard, which brings us to consider the subject of pathology, or a changed condition of structure, and, consequently, a different action. Here, again, the microscope has been of great use in distinguishing healthy from diseased tissues, and their products, and in determining the character of their changes. One of the most common uses of the instrument in this branch is the distinguishing benign and malignant disease, thus, in many cases, enabling us to decide whether a disease is curable or incurable, which is a matter of great importance to patients, as well as to doctors.

"Hygiene is also indebted to the microscope for many of the reforms of modern times. The preservation of health does not only depend upon our surroundings, but upon the adaptability of all substances taken into the stomach for the support of the body. In these days of fraud and adulteration, the microscope is a most efficient detective. Besides the frauds practiced by unscrupulous tradesmen, in mixing deleterious articles with many of the common necessaries of life, we have articles of diet not tampered with by dealers that are unfit for consumption. You are all familiar with the trichina in pork, for instance, which caused great suffering and death, and is

easily detected, and avoidable.

"The microscope analysis of water is a very important

hygienic precaution, and should always be resorted to in seeking water supplies.

"In Materia Medica the instrument is useful for the detections of adulterations and impurities, as well as the

identification of many articles used as remedies.

"In forensic medicine it is often brought into requisition, and has frequently been the means of corroborating or refuting testimony, when nothing else could have done so. In criminal cases, it has sometimes been of great value. Not only can blood-stains be made out, but the kind of blood often ascertained. Human blood, differing from that of many other animals, the difference can be proven by the microscope, and by no other known means. Again, it is a ready means of detecting some poisonous substances. It may be the means of clearing innocent persons from charges of crime, or bringing the guilty to justice. Some instances might be cited where the fate of human beings has been decided by it. And if any mistakes have occurred, it is probably not the fault of the instrument, but of the observer."

Dr. Mouser's paper led to a number of interesting remarks on diagnosis with the microscope, especially in the matter of blood corpuscles, after which the Society selected as a next topic, "The Microscope in Law," and

then adjourned.

The American Quarterly Microscopical Journal. Edited by Romyn Hitchcock.

WE are in receipt of the first number of this journal, the publication of which was announced several months ago, in our advertising form. It is an octavo of eighty-two pages, beside having bound in it sixteen pages of the Transactions of the New York Microscopical Society.

A number of efforts have been made, in this country, to establish a microscopical journal of a high order, but so far they have failed. Our contemporary mentions this fact itself, and in connection alludes to the Lens, published in Chicago by the State Microscopical Society of Illinois. The Lens, as all know who were acquainted with it, was a valuable journal, that compared favorably with other scientific periodicals, in other departments, and yet it soon ceased to exist in consequence of not receiving sufficient

support to maintain its expenses. But not only have microscopical journals so far met with feeble patronage in this country, but also have other journals devoted to sciences that are not of a practical kind—of a kind by which money can be made. Our friend, Prof. Hammond, of New York, some years ago endeavored to establish a Quarterly Journal of Psychology. It was a large and handsome journal, and the contributors were all well-known cultivators of psychology and mental diseases; but after the issuing of a few numbers the undertaking had to be abandoned. Take the American Naturalist of the pres-We do not know with just what success it is meeting at this time, with its new publishers, Houghton & Co., but we know that two or three years ago its subscriptions did not equal its expenses. Only as affording a means to advertise the merchandise of those who carried it on, did We regret to say it, but it is true; only those scientific journals can be made to realize expenses, which are devoted to such sciences which are cultivated professionally, and even they are not sustained half as well as they ought to be.

Now whether our new Quarterly will make its expenses or not we do not know. We hope it will. It certainly deserves a support. It presents a very handsome appearance, printed on good paper, with beautiful type. If it had been projected a few years hence, we feel quite confident that it would live, for we think the time is not distant when the tube will be manipulated for a living, not by a few but by many. At present the manipulators are mostly amateurs and such advanced physicians as use the

microscope in their profession.

The first article is an excellent one, by J. D. Hyatt, on the "Sting of the Honey Bee." It is handsomely illustrated by a number of elegant plates. Mr. Hyatt has been studying this microscopical weapon and has a new theory in regard to its action. Prof. H. L. Smith contributes two articles. One of them is a "Description of a New Species of Diatoms," and is illustrated by several steel plates. The other is on the "Oil-Immersion" of Carl Zeiss." Prof. S. has had an opportunity of comparing some of the famous works of Zeiss with the work of the Spencers and Tolles of this country. He awards the palm most undoubtedly to the two latter. In resolving am. pellucida with a Spencer and with a Zeiss, he says: "With the Spencer objectives,

the outlines of the frustules, and the lines themselves on the valves, were much more sharply defined than with the Zeiss." The editor, Mr. Romyn Hitchcock contributes the paper which he read at the Microscopical Congress, at Indianapolis, in August, on "Angular Aperture Defined." In this article he is anxious that a definition of angular aperture should be settled upon, and proposes one himself.

But we have already run this article to too great a length. We will conclude by saying that the American Quarterly is of the very highest order and is highly creditable to this country. We wish it success, for it is certainly deserving of it. The microscopists of the United States should see to it that they give it its patronage, for we would really regard it disgraceful to them, if, after the issuing of a number or so at great expense to its projectors, it would have to cease its existence.

GLEANINGS.

CAUSES AND CURE OF INSOMNIA.—Prof. James Sawyer, of Queen's College, divides insomnia into three groups which he names "psychic," "toxic," and "senile." The psychic form may be due to sudden and severe mental shock, which will sometimes at once induce persistent insomnia; or to prolonged mental strain, in all its varied phases, which produces partial or complete vaso motor paralysis of the intracranial bloodvessels. The subjects of this form of insomnia are mostly men, particularly those of nervous temperament. A well-marked group of symptoms always follows prolonged suffering from this affection, most of which are given by certain writers among the signs of cerebral hyperæmia. It is probable that they mark what may be called irritable exhaustion of the brain, attended by more or less abnormal increase of intracranial vascularity, and accompanied by some general prostration of the bodily powers. In this form, an unnatural excitation of the cerebral vessels is the initial fault. In the next, the toxic form, a poisonous agent maintains cerebral vascularity at such a height that conscious cerebral activity-that is, wakefulness-is an inevitable consequence. Such a poison may be introduced into the body from without, or it may be a product of diseased pro-

cesses arising within the body itself. The external poisons which most frequently give rise to sleeplessness are tobacco, alcohol, tea and coffee; the internal, products which accumulate in gouty persons and in subjects of kidney disease. When due to the latter cause (internal poisons), the insomnia is rarely complete, the patient complaining that he has great difficulty in falling asleep, that he is easily awakened, and that he always dreams when asleep. The senile form is due to the degeneration of the smaller cerebral arteries; the vessels become less elastic, and physically unable to adapt themselves to the condition of relative arterial anæmia which is requisite for healthy sleep. In the treatment, soporifics are often necessary. Of these, the chief are chloral, opium, morphia, the bromides, Indian hemp, alcohol, and affusion with cold water. In the severer forms of psychic insomnia, sleep must be at once procured by some efficient hypnotic, preferably chloral. In the more chronic forms, chloral should be sparingly used. In the wellnourished, bromide of potassium, in from thirty to sixty grain doses, is by far the best hypnotic. Tincture of ergot, or tincture of digitalis, may be combined with it. In many cases of chronic psychic insomnia, when the patient is worried, sorrowful, weakly and anæmic, alcohol in the shape of a "nightcap" is without an equal. The formation of regular habits, and the taking of sufficient daily exercise should be insisted upon. In the toxic forms, the external poisons should be removed; the treatment of the internal forms involves the treatment of the diseases from which the poisons are derived. Senile insomnia is very obstinate; perhaps in the bromides, with full doses of hop or henbane, we have the best and least harmful means for its relief.—The Lancet, June 22, 1878.

Telephonic Auscultation.—A correspondent in the Student's Journal of Saturday has the following: "In my last letter I suggested that the telephone might be used for the purpose of diagnosing heart and lung diseases. I scarcely expected to be called upon just yet to announce that the idea has been carried out, but I observe that a correspondent of the Medical Press and Circular states that he has been able, with the telephone, to hear the sounds of the chest, distinctly, at a distance of thirty yards. The time may come when our fashionable physicians will

have consulting-rooms in the large provincial towns, each having telephonic communication with his London consulting-room, where he will sit, examine, and prescribe for those patients who would find it inconvenient to come up to town to consult him. Of course, patients would have to attend at the provincial consulting-room at such times as he would appoint. Bristol patients could attend at 10 o'clock A. M., Birmingham at 10.30, Oxford at 11, and so on. There would probably be some difficulty about the fees; they could not be transmitted by telephone. But these could be paid to an agent or secretary."—Dublin Press and Circular.

Hysteria in Male.—Dr. Bolles reported the following case: A young man was suddenly attacked with almost complete (hysterical) coma, and was found in that condition in bed one morning, occasionally sobbing, but not responding to any questions, nor to pricking, pinching, or touching the conjunctiva. Pulse varied from 100 to 120; temperature 100½°. There was free perspiration. He passed urine of a light color in large quantities. He improved a little upon the next day, but subsequently relapsed, and remained so for four days. The attack was brought on by some "amatory misunderstanding," and subsided immediately upon reconciliation taking place, leaving a condition of exhaustion for several weeks.

DISINFECTION OF HOSPITALS.—Some time ago the French Society of Public Health appointed a committee to report on the best means of disinfecting hospitals, etc. The report was read on the 27th of February, of this year. It chiefly dealt with the value of heat as a means of purification. It is cheaper and more effectual than any other system which has come under the notice of the commissioners. The heat of the air must be raised to 212 or 220 degrees Fahrenheit. During certain epidemics, the pillows and beds supplied to patients should be filled with bran, which is immediately burned after their death or discharge from hospital.—Medical Examiner.

DIALYZED IRON.—Dr. Wm. Judkins confidently relies upon this drug in the "diarrheal troubles of children." He has used it in a number of cases, some of them decidedly grave, both in private practice and at the Children's Home, of Cincinnati, and recommends its further trial by

physicians. Dose, from two to fifteen drops in water, every two or three hours. It is readily taken by children, being nearly tasteless. In Am. Practitioner, May... Dr. Yandell writes that a year's extensive experience with this preparation has convinced him that it is an exceedingly reliable and rapid tonic. Read his article entitled "Bad Medicines," in the Medical News.

Curious, if True.—The Chicago Medical Times (Eclectic) reports two marvelous cases. Number one was a woman who lived four years and three months without the least discharge from the bowels. The urine was evacuated by the catheter, but sometimes only once in three weeks. She took nourishment, but vomited afterward. No post-mortem. Number two was a doctor, a regular graduate, who resorted to starvation on account of ill-health, and ate or drank not a particle of food for forty-seven days. During all this time he took daily exercise, walking often several miles at once. He finally regained his health.

Hypodermic Injections of Digitaline—Dr. Gubler announced at the meeting of the Paris Societe de Therapeutique, on Feb. 13, that, having made numerous attempts to utilize the active principles of digitalis, he had attained his object. He uses a solution of Homolle and Quevenne's amorphous digitaline, in a mixture of equal parts of water and alcohol; one gramme of which solution contains two milligrammes of digitaline. He injects half a syringeful, that is to say, one milligramme of digitaline, and notes all the effects of digitalis. These injections do not produce any local accidents.—London Med. Record, March 15, 1878.

Dialyzed Iron in Arsenical Poisoning.—The administration of dialyzed iron as an antidote for arsenical poisoning should be followed immediately by a teaspoonful or more of common salt, thus insuring the formation of the ferric hydrate and the consequent neutralization of the poison. This should at once be followed by an emetic, as the action of the ferric hydrate on the arsenic is not to coagulate it, but to form a perfectly definite chemical salt known as the arsenite of iron (ferric arsenite), which, though practically insoluble, is far from being harmless.—

R. V. Mattison, Ph. G., in Phila. Med. Times.

Intra-Uterine Injection of Ergotin.—London Lancet: Ergotin has been administered hitherto, by the general system, in order to secure its local action. An American physician, Dr. Ashe, states that he has employed it as an intra-uterine injection with great success in cases of post partum hemorrhage. He first clears out the blood coagula, then injects cold water, and then as quickly as possible a solution of about twelve per cent. of ergotin. The uterus contracts instantly, and no ill-result was in any case observed. The injection appears to produce no irritation.

THE INJECTION OF MERCURY.—E. W. Hamburgeb (Prayer Med. Wochenschrift, Nos. 4 and 5, 1877, and Centralblatt fur die Medicin Wissenschaften, July 28) found that the urine contained mercury regularly during the use of injections of mercurial ointment, while the milk contained none. When mercury was administered by suppository, the urine and milk both gave evidence of the presence of the drug. He used the electrolytic method of Schneider, after satisfying himself, by experiments, of its usefulness.—
London Med. Record, March 15, 1878.

ALBUMINURIA.—Elder bark steeped in hard cider, given in ounce doses three or four times a day sometimes effects a cure in albuminuria and dropsy. It is, however, only of value in cases not complicated with cirrhosis of the liver or structural lesions of the valves of the heart, its action, so far as I have tested, being only to correct that morbid condition which results in the elimination of albumen by the kidneys. It is only valuable when given in the hard cider, which seems to extract only certain principles of the bark.

Action of Opium and Belladonna on the Secreting Organs.—Opium tends to check activity of most secreting organs except the sudoriparous glands of the skin, as shown by its effects in diarrhoa, diabetes, etc. Opium produces free perspiration, while belladonna is very useful for the opposite effect of arresting profuse perspiration. Belladonna, too, checks the activity of the mammary glands, and arrests the flow of milk. It also acts on the salivary glands, and retards their activity.

CARRON OIL IN ANAL FISSURE.—This painful affection, which has heretofore resisted almost all forms of treat-

ment by local applications, has been successfully managed by Carrere, who states in *Anna es de la Med. de Grand* that he applies the mixture of lime and water and linseed oil, so commonly used in burns. This is done several times daily and in all cases he has obtained a cure in, at farthest, eight days.—Allg. Med. Cent.-Zeit.

Bryonia and Drosera in Pertussis.—L' Anner Medicale contains a report from M. Louvet Lamare on the virtues of byronia and drosera in whooping cough. He gives during the first or catarrhal stage, to a child of seven years, about thirty drops of the tincture of bryony daily, and in the stage of spasm, the same quantity of tincture of drosera. Under the action of the latter, the disease rapidly subsides. This is the result of an experience of nine years.

CALABAR-BEAN IN APINOCA.—Some physicians recommend it in the dyspnœa of emphysema, its success in which is explained by its improving the atonic condition of the muscular tissue in the walls of the bronchi. It is said to act well in attacks of mania accompanied by cerebral hyperæmia. Applied to the conjunctiva, it is used in ophthalmic medicine; e.g. in paralysis of accommodation.—Binz.

Mal de Mer.—As many physicians are expecting to cross the ocean this season, it will be appropriate to call attention to the use of Mensman's Beef Tonic in sea-sickness. It has been very fully tested and has been a means of relief to many an ocean-tossed stomach. The surgeons of the Pacific Mail Steamers have found it of great benefit, and they now put it on their requisitions for every voyage.

NITRITE OF AMYL, in *sudden* attacks of ague, has succeeded, in the hands of Dr. Gordon Price, of Jessore, Bengal, in reducing the cold stage to a few minutes' duration, and abbreviating the hot stage. He does not substitute amyl for quinia in the ordinary treatment of malarious fevers, but holds it in reserve for attacks which come on unexpectedly.—*Lancet*, *March* 23.

A Good Example.—London Med. Ex.: It is not often that a Cabinet Minister offers a prize on any particular subject connected with medicine; but the French House Secretary forms an exception worthy of imitation. He has placed a sum of 2,000 francs at the disposal of the Academy of Medicine for the best paper upon the Mor. tality of Infants.

BOOK NOTICES.

CLINICAL DIAGNOSIS: A Hand-Book for Students and Practitioners of Medicine. Edited by James Finlayson, M.D., Physician and Lecturer in Clinical Medicine in the Glasgow Western Infirmary, etc. With 85 Illustrations. 12mo. Pp. 546. 1878. Philadelphia: Henry C. Lea. Cincinnati: R. Clarke & Co.

It is the design of the work to give assistance in the clinical study of the signs and symptoms of disease, by supplying carefully selected data in a condensed form, by submitting accurate methods of investigation, by pointing out probable fallacies, and by directing attention to collateral inquiries by issues, which might readily other-

wise be overlooked by the inexperienced.

In attempting to produce such a volume, as indicated, it was found expedient to apply to several contributors. Dr. Samson Gemmell, therefore, has written the portion dealing with Physical Diagnosis; he has likewise prepared a short section on the Sphygmograph, to which instrument he has devoted some special attention. Prof. Stephenson has taken the important department of Female Disorders; Dr. Joseph Coats the section on Laryngoscopy and Diseases of the Throat. It being regarded important to add a department of Insanity, Dr. Alexander Robertson has supplied it.

The plan of the work is new, differing in many respects materially from previous ones, having the same object in view. Students and practitioners will find it of great service in assisting them in the study of disease and in differentiating the various disorders. With it well studied and understood, there can scarcely occur the errors in

diagnosis that are often made.

A Hand-Book of Nursing for Family and General Use. Published under the direction of the Connecticut Training School for Nurses, State Hospital, New Haven, Conn. 12mo. Pp. 257. 1879. Philadelphia: J. B. Lippincott & Co. Cincinnati: R. Clarke & Co. This work was prepared for the use of the Training School for Nurses in the State Hospital, New Haven, Conn. The language is plain, brief, and easily understood; and the whole directions so comprehensive as to

provide for the ordinary routine of duties among the sick. It is often said that good nursing is more important than good doctoring. That, though a patient may recover without the latter, yet the former is a sine qua non in all cases of any severity. Whatever truth there may be in this, one thing is sure: that proper nursing is of the highest importance, and without it the efforts of the most skillful physician will be rendered nugatory.

Nursing has gotten to be a profession, and this work may be regarded as a contribution to its literature. However kind and well meaning may be the efforts of the old lady friends when an individual is ill, yet, in this age of progress, more intelligent nurses than they are needed. This work therefore, should be in the hands of every one who expects to have to do with the sick, either as a hired nurse or as a friend.

EDITORIAL.

CLOSE OF VOLUME.—This number of the MEDICAL NEWS closes the eleventh volume. For eleven years the journal has been published right along without the missing of a number. We can very well recollect with what trepidation we commenced the publication of a medical journal. We had many, very many misgivings of our success. In fact, we thought the chances were against our succeeding, and were rather expecting at the close of the year to announce the attempt to establish a medical journal a failure. With a brave heart, however, we entered upon the work, resolving that if industry, patience, etc., would surmount difficulties, they should not be lacking in our case. Although at the close of the year we did not quite realize expenses—that, however, was largely due to our inexperience in management—vet the result was very encouraging, and we determined to persevere.

To-day no medical journal stands higher than the Medical News—it is one of the leading journals of the country. Few medical journals have accomplished the good that it has. This is not merely our opinion; but it is confessed on all sides. When its publication was commenced very many abuses existed in the profession of Cincinnati. A ring controlled everything—a ring that was insolent, arrogant, and imperious, and that required every one to

bow to it under penalty of being ostracized. But no such ring exists now. If a physician possesses the required merit, his opportunities are very good in competing for any position. Of course there are still those lawlessly in-

clined, but they do not possess influence.

When the MEDICAL NEWS—then Medical Repertory was first projected it had but thirty-two pages in a number. It now has from seventy-two to eighty pages. It will be perceived that as it has increased in years it has grown in size. With the increased number of pages there has been added somewhat to the price, but not in proportion to the increase in size. For the last two years the price has been \$2.50 a year, postage prepaid. At these terms the News has undoubtedly been the cheapest medical journal published. The number of pages which a subscriber receives in a year, in a book, would cost us five or six dollars. At the same time a volume of the MEDICAL NEWS, as to its reading matter, is of greater value than a like amount of reading matter in a book. Medical journals are always two or three years in advance of medical books; and then, besides, they contain the latest information in every department of medicine, and not in one only.

But cheap as the Medical News is at \$2,50 a year, postage prepaid, we have thought we would venture the coming year to reduce the price to \$2.00 a year, postage prepaid, without in any ways lessening the amount of reading matter. But in thus reducing the price, in order that at the close of the year, when we come to reckon up and compare our income and expenses, we may not find that the latter exceeds the former, our friends must be active in our behalf in the way of obtaining new subscribers. It does not cost much more to print 10,000 copies of the MEDICAL NEWS than it does 5,000. There is only the additional paper and press-work to pay for-no additional type-setting. Every present subscriber can obtain us at least one new subscriber—some can do more than this. Our subscription list, therefore, doubled, we will realize more at \$2.00 a subscriber than we do now at \$2.50. Will every subscriber exert himself to obtain new subscribers? If we do not find that our reduction in price is followed very soon by a considerable increase of new subscriptions, we will be under the necessity of coming back to the old price of \$2.50 a year, which is much below the average

price of medical journals of the same number of pages. The usual price of a monthly of sixty-four pages is \$3.00.

We have a number of subscribers on our list who are delinquent one and two years. To such we will say that they ought to pay up. We know that times are hard, and it is difficult for physicians to collect. Still, with a good many, we believe that with a little exertion on their part, they could meet their obligations with us and not be particularly embarrased thereby. No doubt, there are some who can not pay without very much inconvenience. such we will make the following offer, viz: we will accept on past subscriptions what they can afford to pay, if they will remit for the coming year \$2.00, and afterward endeavor to keep even. We desire to retain all the subscribers we now have, but we wish to square up our books and commence the new year with a new and clean book, in which there will be no charges for past subscriptions. This is certainly a very fair offer, and we hope it will be promptly closed with by every one who does not feel able to pay up in full what he is owing us. We expect, however, those to pay up in full who have become delinguent, not in consequence of hard times, but from negligence. Parties who are indebted to us, and desire to continue as subscribers, in order to make sure of getting the first numbers of the new volume, should inform us of their intentions of accepting our offer to delinquents before the issuing of the January number, whether they are able to make a remittance or not. We preserve but few back numbers, and if there should be delay in re-subscribing, we might not be able to supply the first numbers.

Now, in conclusion, we will say that while it is our in tention to redouble our efforts to publish a first-class journal—to publish one that will be behind none in meeting the wants of the daily practitioner—fully abreast of the times in every particular—we hope our friends will be industrious in obtaining for us new subscribers. In reducing our price we risk a great deal, and would not do so if we did not believe that it would result in more prompt payment of our present subscribers and a very large ad-

dition to our subscription list.











